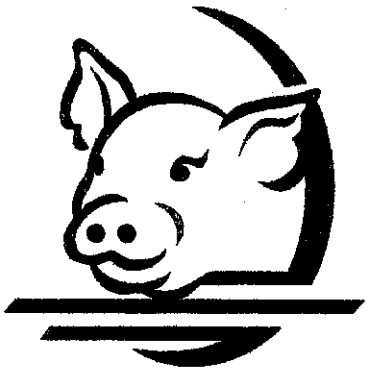

Dowdy Pork LLC

Nutrient Management Plan

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Instructions for Completing the CAFO Permit Application
Nutrient Management Plan Application Checklist

Purpose:

This checklist is designed to assist you in ensuring that all of the required elements spelled out in the General State Operating Permit for Class II Concentrated Animal Feeding Operations (CAFOs), Permit Number SOPCD0000, are properly and adequately discussed in the Nutrient Management Plan (NMP) that is to accompany each CAFO permit application. The use of the checklist will assist with ensuring that a complete CAFO permit application is submitted. If all elements defined in the permit are accounted for, this will in turn, increase the speed at which the CAFO permit application is reviewed, NMP approved, and permit coverage issued.

Instructions:

After obtaining all of the necessary soil tests, manure/ litter analyses, and writing your NMP or contracting it out to a Technical Service Provider (TSP), complete this checklist by:
-finding all of the required items discussed line-by-line in this checklist,
-noting which page(s) the item is on in the NMP, and
-ensure that the person(s) completing the checklist(s) on your behalf initials the boxes as the items are marked complete (via page number(s)).

Incomplete checklists or CAFO permit applications will be returned for completion.

Questions?

If you need further assistance completing the checklist or in preparing your CAFO permit application, including NMP, please contact the Tennessee Department of Agriculture (TDA), your local UT Extension office, or county USDA/ Natural Resources Conservation Service (USDA/ NRCS) office. If you have questions regarding the permit requirements please contact the Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources.

TN Dept. of Agriculture Contacts:

Dr. Sam Marshall: (615) 837-5306; e-mail: sam.marshall@tn.gov

TDEC, Division of Water Resources Contact:

Ms. Erin O'Brien: (615) 253-2245; e-mail: erin.o'brien@tn.gov

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Nutrient Management Plan (NMP) and CAFO Permit Application Checklist for SOPCD0000

Facility Name: Dowdy Perk LLC Form Completed by: Doug Dowdy

Name of Owner: Doug Dowdy

SOPCD Requirements*			Citation of Requirements in (C)NMP/ NMP			
			Completed by producer or TSP		FOR TDA USE ONLY	
Required Element	Permit Page #	Citation	Item Addressed in (C)NMP on Page #	Initials	Comments	Completed (Yes/ No)
Notice of Intent form	4	1.6.1	1			
Declarations Page, which addresses the following items:						
Prevents direct contact of confined animals with waters of the State.	9	3.1.E	74	DD		
Ensures chemicals or other contaminants handled on-site are handled (including spill clean-up) and disposed of properly.	9, 13	3.1.F, 4.10.1.A, 4.10.1.C	74	DD		
All sampling of soil and manure/litter is conducted according to protocols developed by UT Extension.	9	3.1.H	74	DD		
A copy of the most recent nutrient management plan (NMP) will be kept as part of the farm records and will be maintained and implemented as written.	9	3.1.J	74	DD		
If applicable, all waste directed to under-floor waste pits shall be composed entirely of wastewater (i.e., washwater, animal waste) and precipitation runoff from the CAFO areas.	13	4.10.1.B	74	DD		
Notify TDEC of any significant wildlife mortalities following land application of animal wastes.	13	4.10.1.D	74	DD		
Address employee training for proper operation and maintenance of facility where employees are responsible for activites that relate to permit compliance.	13	4.10.1.E	74	DD		
There shall be no land application of nutrients within 24 hours of a precipitation event that may cause runoff. The operator shall not land apply nutrients to frozen, flooded, or saturated soils.	15	4.10.2.F	74	DD		

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Name of Owner: _____

SOPCD Requirements*			Citation of Requirements in C/NMP/ NMP			
			Completed by producer or TSP		FOR TDA USE ONLY	
Required Element	Permit Page #	Citation	Item Addressed in (C)NMP on Page #	Initials	Comments	Completed (Yes/ No)
Expected crop yields	17	5.2.I	42-44	DD		
The NMP addresses facility maintenance.	9	3.2.C	3			
Closure/rehabilitation plan for waste system storage/treatment structure(s) and mortalities that addresses facility maintenance until proper closure to be completed within 360 days.	5, 16	1.6.4, 4.13	72-73	DD		
Includes field specific assessment of potential for N and P2O5 transport from field to surface waters. Must address form, source, amount, timing, and method of application of nutrients on each field to achieve realistic production goals (TN P Index must be provided for field).	14	4.10.2.A.I	45-70	DD		
Current manure/litter analysis for N and P_2O_5 (from within last year).	14	4.10.2.B	23	DD		
Provide results of soil test conducted at a minimum of once every five years for all fields receiving manure, litter, or process wastewater.	14	4.10.2.B	24-36	DD		
Application of waste is no closer than 100 ft. to any down-gradient surface waters, open tile line intake structures, sinkholes, ag. wells, or other conduits to surface waters unless 100 ft. setback with a 35 ft. wide vegetated buffer is substituted or it is demonstrated that a setback/buffer is not needed due to use of alternate conservation practices or where field conditions would provide equivalent pollutant reductions.	14	4.10.2.D	3	DD		
New CAFOs located adjacent to high y stream (Exceptional TN waters) leave in place a 60-ft natural riparian buffer between stream and land application area.	14	4.10.2.E	N/A			

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Name of Owner: _____

SOPCD Requirements*			Completed by producer or TSP		FOR TDA USE ONLY	
Required Element	**Permit Page #**	**Citation**	**Item Addressed in (C)NMP on Page #**	**Initials**	**Comments**	**Completed (Yes/ No)**
All inputs used in open storage structure design including climate data for 30 previous years with monthly precipitation and evaporation values, the number and types of animals, anticipated animal sizes or weights, any added water and bedding, any other process wastewater, size and condition of outside areas exposed to rainfall and contributing runoff to the open manure storage area.			8	DD		
Documentation of the total volume for solids accumulation, design treatment volume, total design volume, approximate number of days for [illegible]ge capacity.	17	5.2.G	8-17	DD		
If any earthen structures were constructed or modified after April 13, 2006, a subsurface investigation is provided.	15	4.11.B	N/A	DD		

Comments:

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Tennessee Department of Environment and Conservation,
Division of Water Pollution Control
401 Church Street, 6th Floor L & C Annex, Nashville, TN 37243
(615) 532-0625

CONCENTRATED ANIMAL FEEDING OPERATION (CAFO)
STATE OPERATING PERMIT (SOP)
NOTICE OF INTENT (NOI)

PED

Type of permit you are requesting: ☒ SOPCD0000 (designed to discharge) ☐ SOPC00000 (no discharge) ☐ Unknown, please advise

Application type: ☐ New Permit ☑ Permit Reissuance ☐ Permit Modification

If this NOI is submitted for Permit Modification or Reissuance provide the existing permit tracking number: ____

OPERATION IDENTIFICATION

Operation Name: Dowdy Park LLC	County: Fayette
Operation Location/ Physical Address: 4650 Old Jackson Rd 4.6 mi Northeast of Somerville, TN on Old Jackson Rd	Latitude: 35.296111 Longitude: 89.288333
Name and distance to nearest receiving water(s): Catron Creek (runs through farm) Big Muddy Creek (4	
If any other State or Federal Water/Wastewater Permits have been obtained for this site, list those permit numbers: TNA 000019	

Animal Type: ☐ Poultry ☑ Swine ☐ Dairy ☐ Beef ☐ Other ____

Number of Animals: 1800 Sows 300 Gilts | Number of Barns: 4 | Name of Integrator:

Type of Animal Waste Management (check all that apply): 1800 pigs
☐ Dry
☑ Liquid
☐ Liquid, Closed System (i.e. covered tank, under barn pit, etc.)

Attach the NMP ☑ NMP Attached | Attach the closure plan ☑ Closure Plan Attached | Attach a topographic map ☑ Map Attached

PERMITTEE IDENTIFICATION

Official Contact (applicant): Doug Dowdy	Title or Position: Owner\Manager			
Mailing Address: 4855 Old Jackson Rd	City: Somerville	State: TN	Zip: 38068	☐ Correspondence ☐ Invoice
Phone number(s): 901-465-6541 office 901-413-1570 (cell)	E-mail:			
Optional Contact:	Title or Position:			
Address:	City:	State:	Zip:	☐ Correspondence ☐ Invoice
Phone number(s):	E-mail:			

APPLICATION CERTIFICATION AND SIGNATURE (must be signed in accordance with the requirements of Rule 1200-4-5-.05)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and title; print or type	Signature	Date
Doug Dowdy Owner\Manager	Doug Dowdy	6\15\11

STATE USE ONLY

Received Date	Reviewer	EFO	T & E Aquatic Fauna	Tracking No.
	Impaired Receiving Stream	High Quality Water		NOC Date

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Table of Contents

Introduction

Dowdy Pork's facility consists of six swine barns, four lagoons, and a compost shed. Four barns are included in this plan: two combination breeding and gestating, one farrowing, and one isolation, as well as the lagoon these barns feed. These barns are all shallow pit flush barns. The lagoon and barn plans show how they flush into the lagoon through a series of underground pipes.

The lagoon was designed by W.A. Millsaps, Engineer with SCS, now NRCS. Copies of the designs and capacities have been included in this plan. The clay lined lagoon will maintain 2 feet of freeboard. The lagoon is also fenced around completely. Lagoon levels are checked weekly, and rainfall levels are recorded on the farm to keep track of total intake.

We have recently added a small separator that enables us to cut water usage by recirculating flush water off of the lagoon. The lagoon water is applied to 70 acres of bermuda hay and 53 acres of row crop. Only one field, H-3, has no manure applied to it, due to the underground system not reaching it at this time. The manure is moved through an underground system of pipes with risers located in the fields. Manure is applied with reel guns and K-line pod systems. The reel guns put out .25" (6,788.5 gal/ac) or less per trip to allow for proper absorption and to minimize run off. The K-line pod system runs at a very low pressure, allowing us to put out .5" (13,577 gal/ac) over a six our span without run off.

The manure is applied at rates based on the Phosphorous index worksheet provided by NRCS, and the MMP Nutrient removal rates for the permanent bermuda fields and the rotational crops on the fields in row crop. The yield goals and rotation schedules are all shown in the application charts prepared for the fields used for manure based fertilizer. The commercial rates for N & K are on the charts. No commercial based P will be applied since you can see most P rates are in the High to Very High range according to soil sample results. The N & K will be applied on an as needed basis to maintain nutrient levels based on soil samples and MMP recommendations

Hybrid bermuda for hay is utilized in our plan because of its ability to use more nutrients (particularly P) and top erosion, thus stopping the loss of phosphorus. Our row crop fields that are next to Catron Creek have a 40 foot bermuda buffer strip to control erosion and stop the loss of nutrients into Catron Creek.

The other two barns on the west side of the farm were designed on a closed system, three stage lagoon. The system recirculates flush water out of the third stage back through the barns. The two barns together hold less than 650 head at any given time. One is a farrowing barn, while the other is a barn for gilts to acclimate them to our system. The lagoons do have pumps and pipes in place to pump into our underground system and spread on the land in the event of an emergency that requires us to drop the water level quickly.

The barns are checked daily for fresh water leaks, and all water nipples and troughs are checked weekly for any routine maintenance problems. The lagoons were designed with levees, so that only waste water and direct rainfall get into them. On the map, the lagoon required for this CNMP is labeled L-1. To the south of L-1, about 300 yards, are two ponds labeled W-1 and W-2. We use these ponds as extra storage, if needed, during the winter months. We have an underground pipe that carries water under Old Jackson Rd from L-1 to W-1. W-2 is located directly below W-1 and catches any overflow.

In the summer months, we can pump water from W-2 back into W-1, if needed, as well as pump water from W-1 back to L-1 to spread on the land. We do this so we can limit the use of freshwater, since on page 8 of this NCMP, NCRS stated in the original plan that fresh water may be needed during the drier months of the year. We eliminate the use of freshwater by using the winter water caught in W-1 and W-2, which drops the water level for winter storage in those ponds.

x Doug Dowdy

Doug Dowdy

Barns

(barns are numbered to coincide with map)

1. Gestation Barn
2. Gestation Barn
3. Farrowing Barn
4. Receiving (isolation) barn

Fields

(fields are numbered to coincide with map and soil samples)

E-1 – Row Crop – Wheat, Soybean, Corn, Cotton Rotation

E-2 – Tifton Bermuda Hay

E-3 – Row Crop – Wheat, Soybean, Corn, Cotton Rotation

E-4 – Tifton Bermuda Hay

E-5 – Tifton Bermuda Hay

E-6 – Tifton Bermuda Hay

E-7 – Row Crop – Wheat, Soybean, Corn, Cotton Rotation

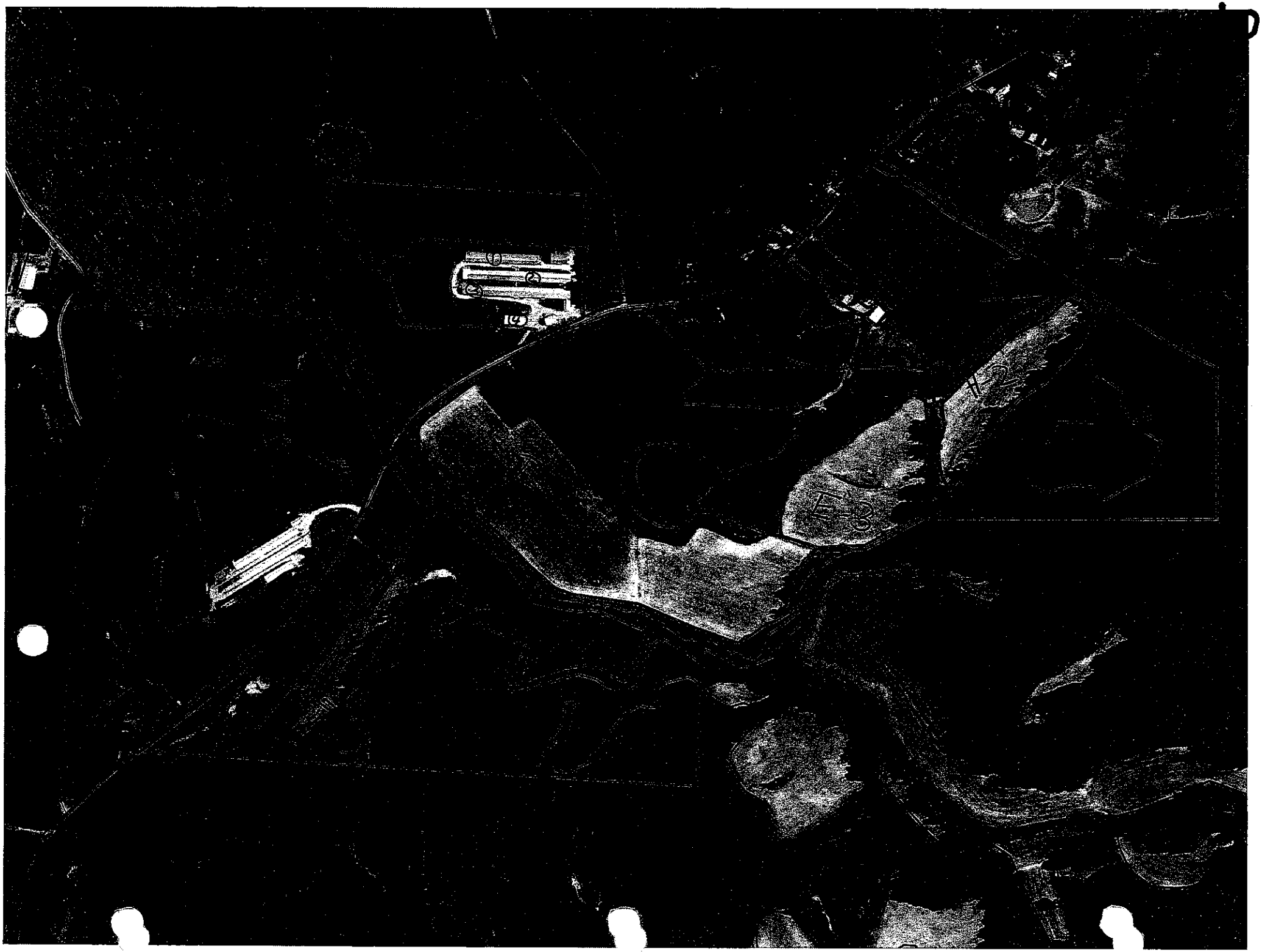
E-8 – Tifton Bermuda Hay

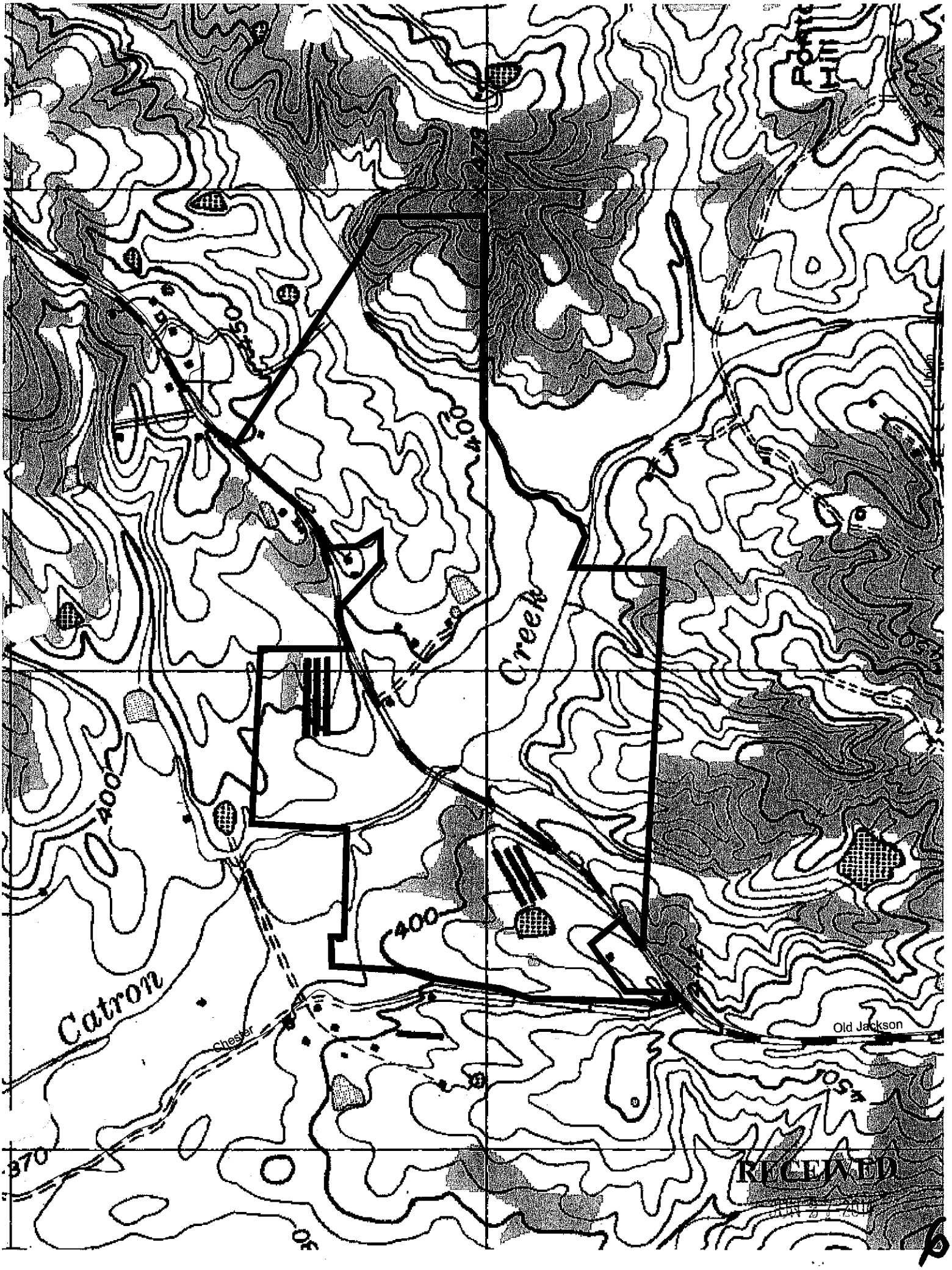
E-9 – Tifton Bermuda Hay

E-10/11 – Tifton Bermuda Hay

H-1 – Tifton Bermuda Hay

H-2 – Row Crop – Wheat, Soybean, Corn, Cotton Rotation




Creek
Catron
Chester
Old Jackson
400
400
370
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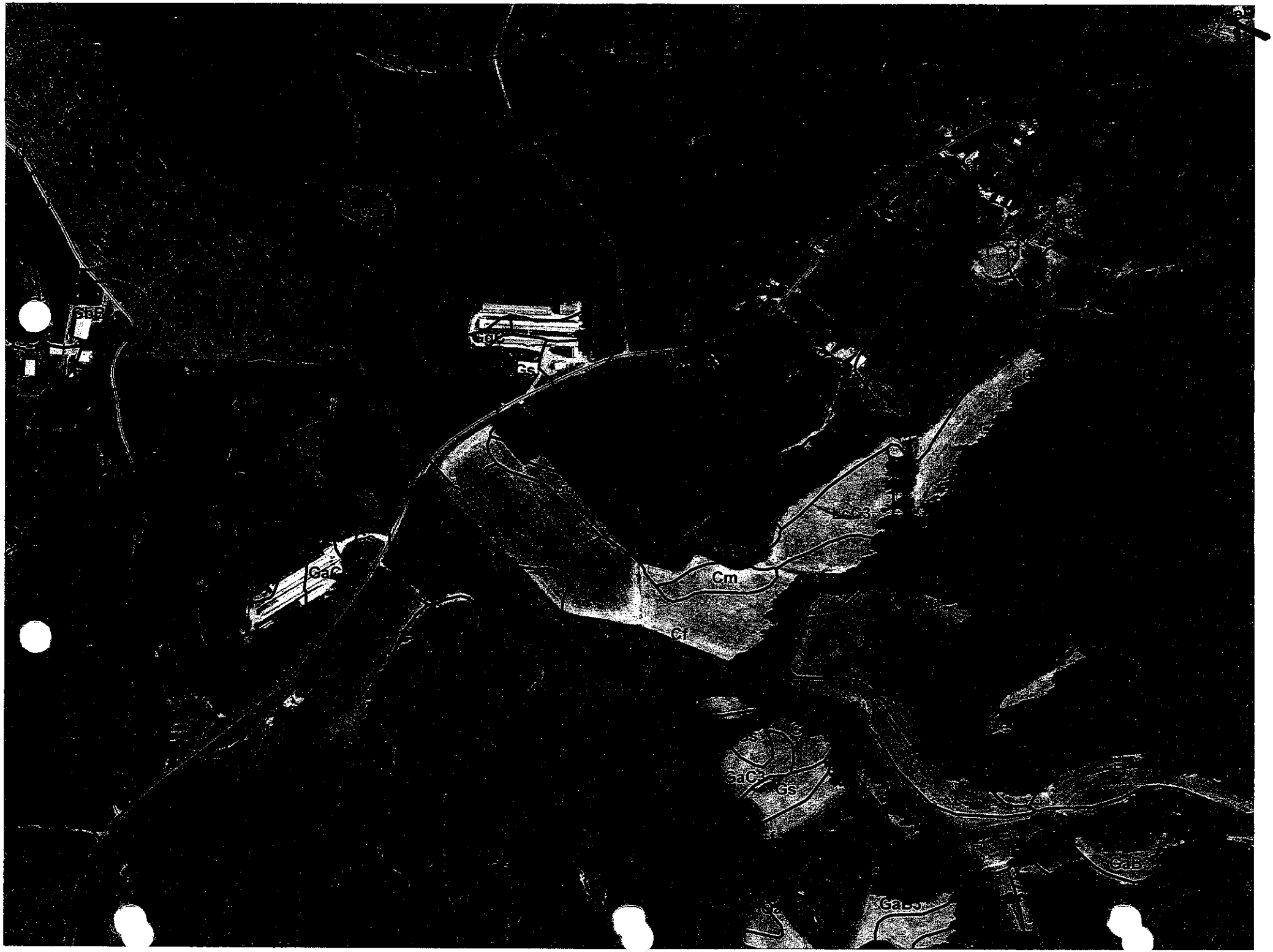
StaB
GaC
Cm
Gf
SaCs
Gs
caB

Waste Management System
Storage Requirements

For Fayette County, Tennessee - 4 wetest months Moscow, Tennessee

Month	Pan Coeff.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
Precip(in.'s)			4.99	4.75	4.69	5.56	
Evaporation			1.20	0.90	1.10	2.60	
FWS Evaporat'n.	0.766		0.92	0.69	0.84	1.99	
Balance Rf		0.00	4.07	4.06	3.85	3.57	15.55

For remaining months evaporation has a more significant effect on the balance.
In the following 4 months of April thru July, rainfall exceeds evaporation by only 2 in.
For August thru November, Rainfall only exceeds evaporation by 0.27 in.

With the exception of unseasonable weather, more fresh water may be needed for drier months.

Subtotal From Page 1: 373743

Adjust for Rainfall Storage - Dec. through March (in.) 15.55 in. = 1.30 ft.

25Yr. - 24 Hr. Stm. Rainfall for Fayette Co., Tenn. (in 6.4 in. = 0.53 ft.
Total Precip & Dstorm = 1.83 ft.

Approx. Area of Rf for estimated pond area (sq. ft.) = 84000

	Rf		Dstm	
Approx. Rf + Dstm Vol. =	108830	+	44520	153350

Subtotal Req'd. Storage (c.f.) = 527094

Capacity of system per W.A. Milsap's design = 632145

SCS ENG 529
REV 8 69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

EARTHWORK COMPUTATION SHEET

LOCATION Fayette Co, IN	OWNER Earl Dowdy		
WATERSHED	SUB-WATERSHED	SITE NO.	
CONTRACTOR	COMPUTED BY	DATE 9-24-91	
ITEM Earthworks - Earthfill	CHECKED BY	DATE	
CONTRACT NO.	ESTIMATE ——— CU. YDS.	ACTUAL ——— CU. YDS.	

Top W.d = 10' 5:1 S = 3:1 - 3:1 & 3:1 - 2:1

STATION	END AREA SQ. IN.	[redacted]	SUM OF [redacted]	DISTANCE IN FEET	SECTION PRODUCTS CU. FT.	VOLUME CU. YD.	REMARKS
	Fill-Ft	Yd³/Ft	Yd³/Ft				
D-75L	0.0	0.0	0.7	25	18		
D-100L	1.4	0.7	4.2	50	210		
D-150L	4.5	3.5					Key Exc. & Backfill
D-150L	1.0	0.5	3.5	50	175		D = 1.0'
E-150L	4.0	3.0	7.2		360		S:S = 2:1
E-150L	5.0	4.2	8.5		425		B.W. = 10'
G-150L	5.1	4.3	8.3		415		E.A. = 12.0'
H-150L	4.9	4.0	9.7		485		Length = 1000'
I-150L	6.1	5.7	13.8		690		V = 1000 X 12/27 = 444
J-150L	7.6	8.1	20.7		1035		
K-150L	9.8	12.6	27.2		1360		Total Fill = 444 + 11594
L-150L	10.7	14.6	37.2		1860		= 12,038
M-150L	12.7	22.6	41.6		2080		
M-100L	11.5	19.0	37.4		1870		Use 12,000 Cu. Yds
M-50L	11.3	18.4	37.4		1870		
M-0	11.5	19.0	37.1		1855		
M-50R	11.2	18.1	34.0		1700		
M-100R	10.4	15.9	30.7		1535		
M-125R	10.0	14.8	29.4		1470		
L-150R	9.9	14.6	28.1		1405		
K-200R	9.5	13.5	25.4		1270		
J-225R	8.8	11.9	22.0	50	1100		
I-250R	8.0	10.1			23186/2 = 11,594 yd³		

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SOIL CONSERVATION SERVICE

EARTHWORK COMPUTATION SHEET

LOCATION Fayette Co	OWNER Earl Dowdy		
WATERSHED	SUB-WATERSHED	SITE NO.	
CONTRACTOR	COMPUTED BY	DATE	
ITEM Excavation Volume	CHECKED BY	DATE	
CONTRACT NO.	ESTIMATE ——— CU. YDS.	ACTUAL ——— CU. YDS	

Pool Bottom 79.50

STATION	END AREA SQ. IN.	END AREA SQ. FT.	SUM OF END AREAS SQ. FT.	DISTANCE IN FEET	SECTION PRODUCTS CU. FT.	VOLUME CU. YD.	REMARKS
Line D		0					
Line D+30		920	920	30	27600		
Line E		770	1690	20	33800		
Line F		620	1390		49500		
Line G		660	1280		64000		
Line H		620	1280		64000		
Line I		530	1150		57500		
Line J		1680	2210		110500		
Line K		920	2600		130000		
Line L		460	1380		69000		
Line L+20		150	610	20	12200		
Line L+24		0	150	4	600		
					638700	/54 =	11,828 yd³
					Key etc	=	444
							12,272
					Total Exc - Use -		12,300 yd³

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REV 8 69

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EARTHWORK COMPUTATION SHEET

LOCATION Fayette Co	OWNER Earl Dowdy		
WATERSHED	SUB-WATERSHED	SITE NO.	
CONTRACTOR	COMPUTED BY	DATE	
ITEM Stor. Vol. Comp.	CHECKED BY	DATE	
CONTRACT NO.	ESTIMATE ——— CU. YDS.	ACTUAL ——— CU. YDS.	

N. Pool El = 89.50 Pool Bottom = 79.50 D = 10'

STATION	END AREA SQ. IN.	END AREA SQ. FT.	SUM OF END AREAS SQ. FT.	DISTANCE IN FEET	SECTION PRODUCTS CU. FT.	VOLUME CU. YD.	REMARKS
Line D+15		0					
Line D+35		580	580	20	11600		
Line - E		600	1180	15	17700		
Line - F		620	1220	30	61000		
Line - G		660	1280		64000		
Line - H		660	1320		66000		
Line - I		700	1360		68000		
Line - J		3490	4190		209500		
Line - K		3170	6660		333000		
Line - L		2810	5980	50	279000		
Line L+9		2800	5610	9	50490		
Line L+39		0	2800	30	84000		
					1264290/2 = 632,145 cu. Ft		

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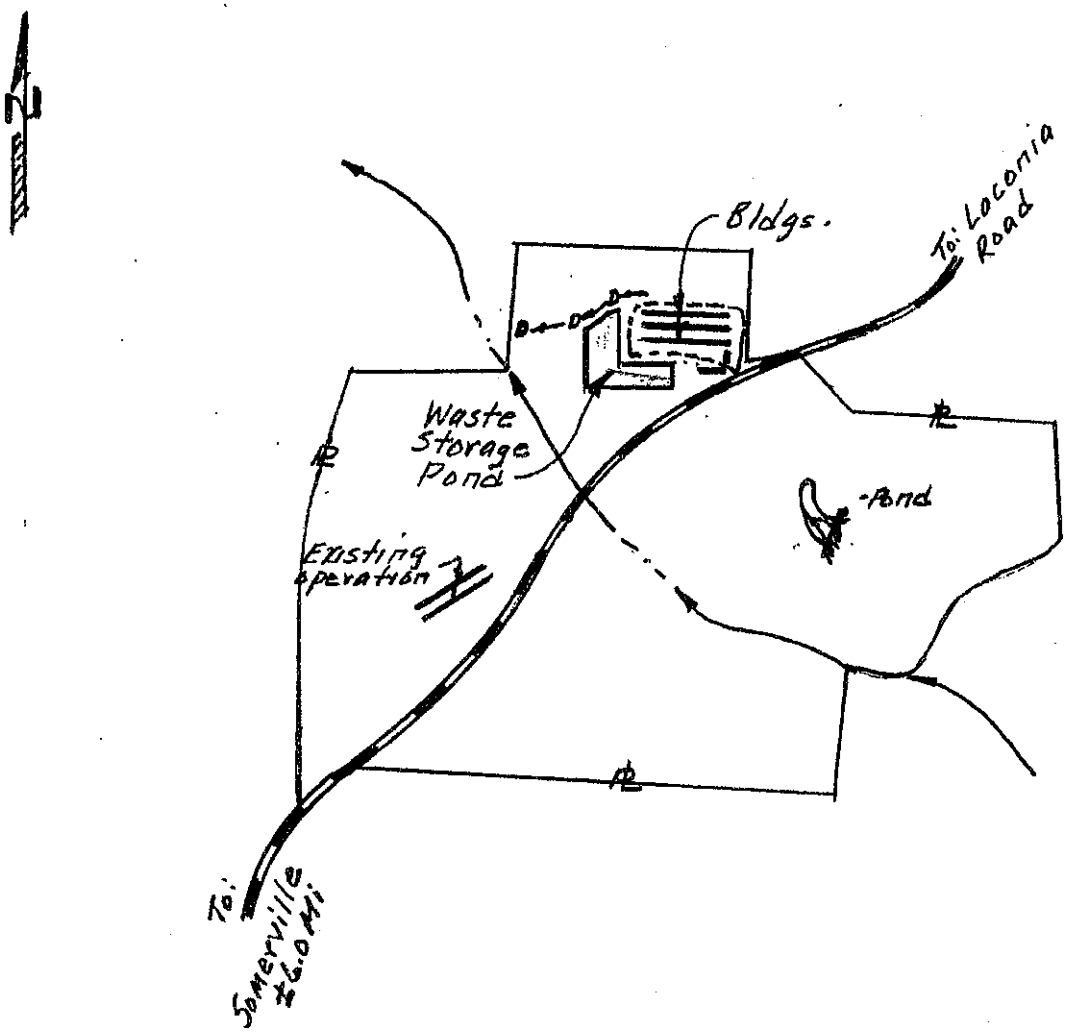
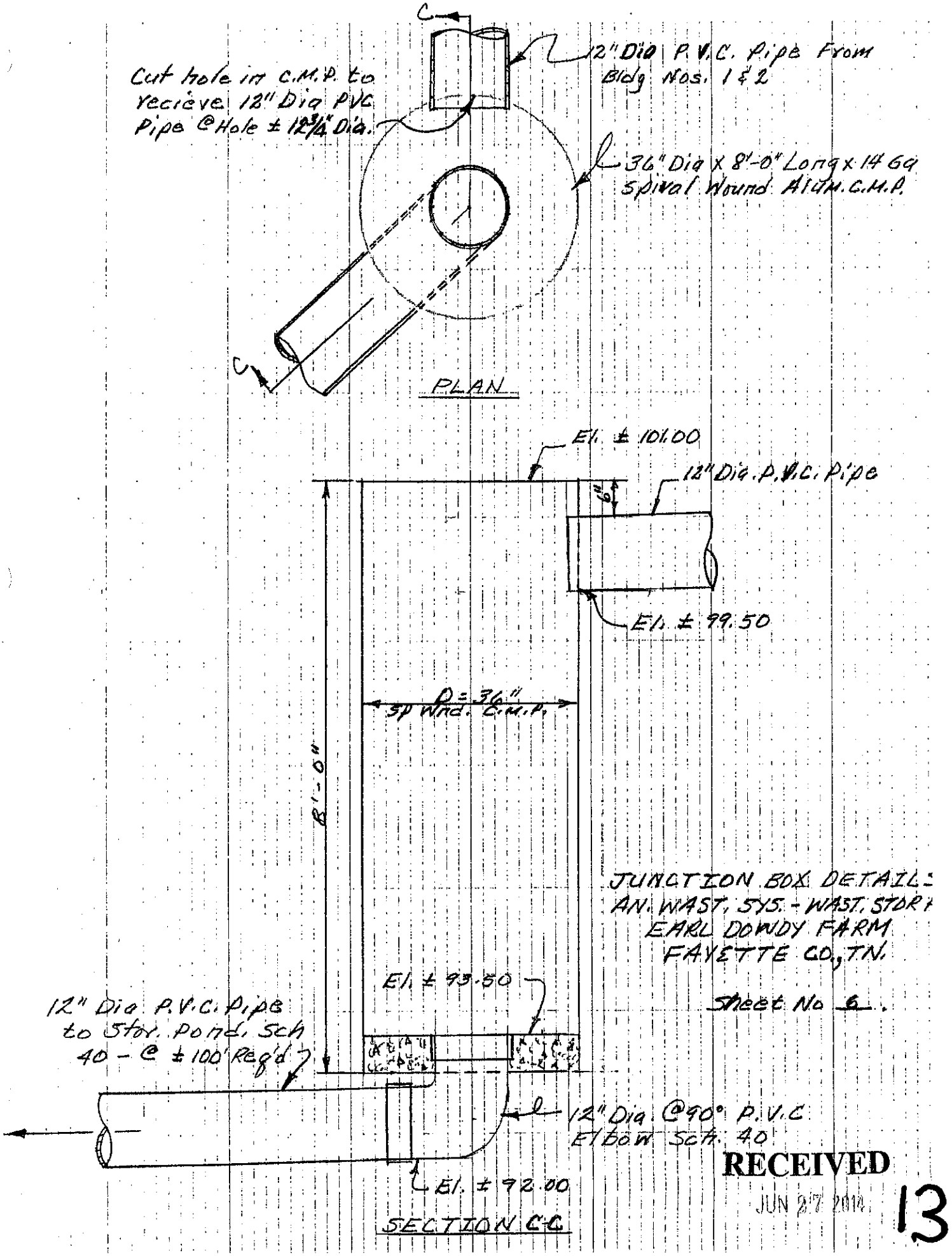
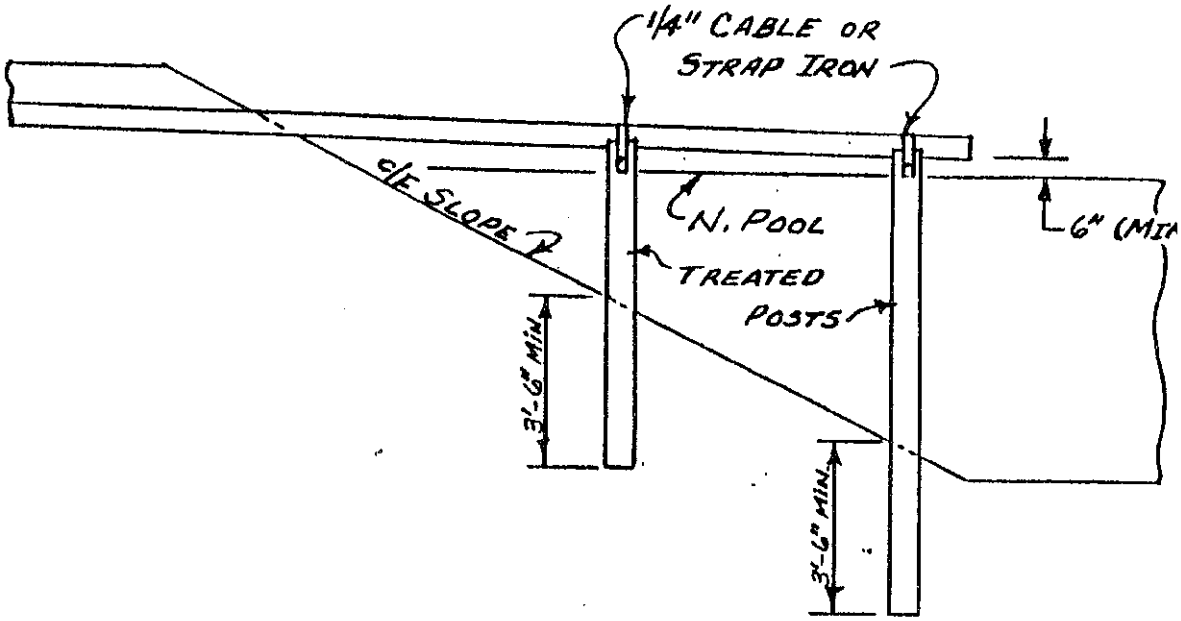


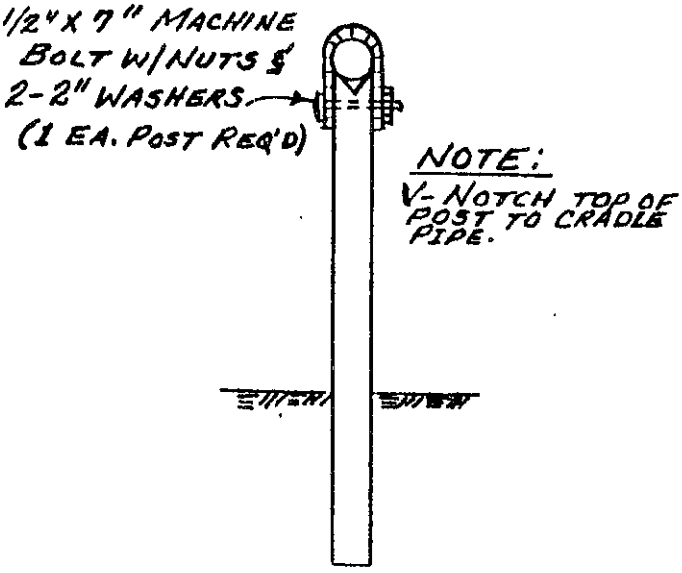
SITE LOCATION MAP
(No Scale)

SITE LOCATION MAP
AN. WAST MGM'T SYS. - WAST. STOR. A
EARL DOWDY FARM
FAYETTE CO., TENN.





SIDE ELEVATION



BENT No.	POST SIZE (IN.)	POST LENGTH (FT.)	POST REQUIRED (NO.)
1	6X6	6.5	1
1	6X6	10	1
1	6X6	14	1
2	6X6	6	1

FRONT ELEVATION

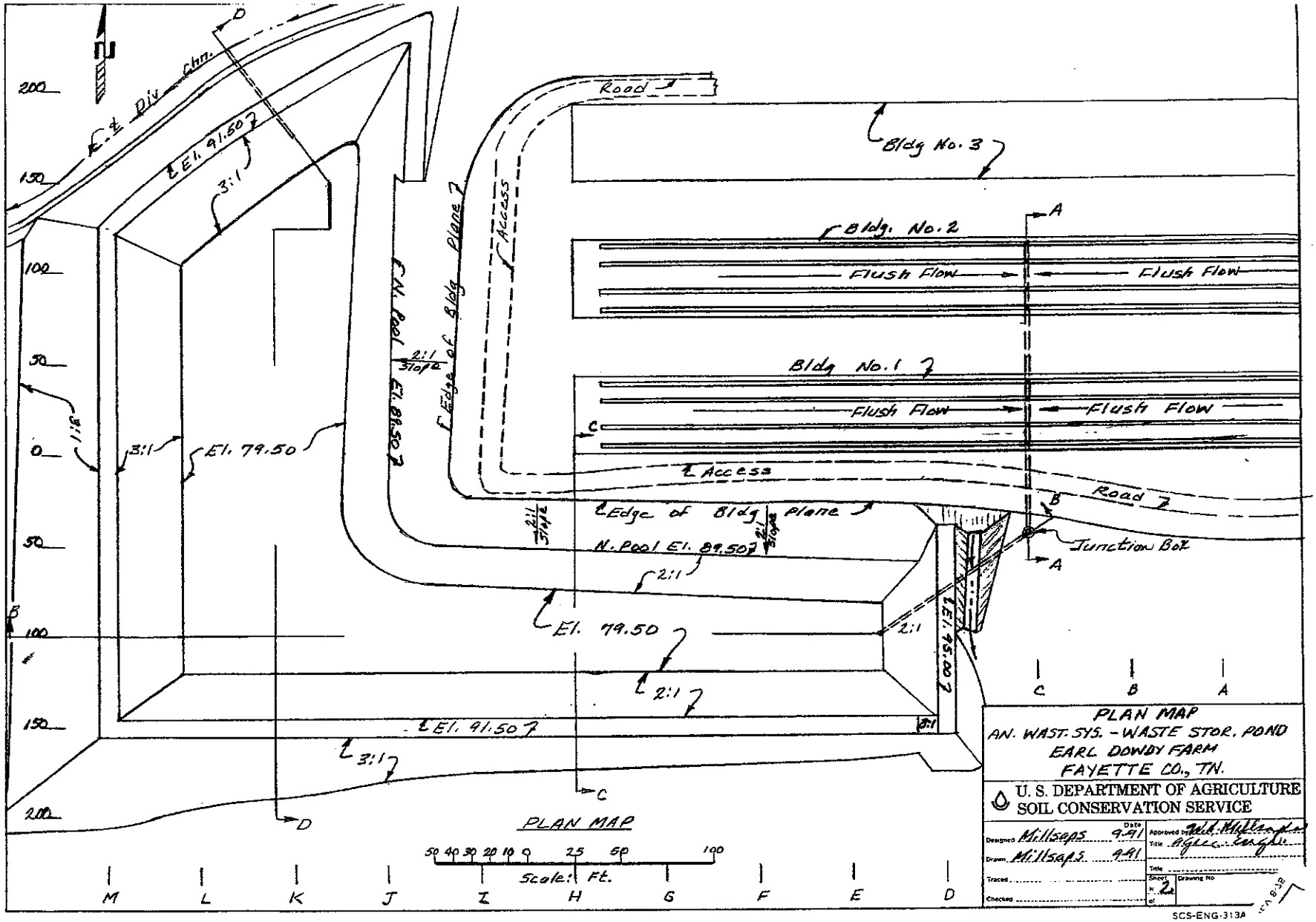
BENT DETAILS

BENT DETAILS
ANIMAL WASTE DISPOSAL SYSTEM
EARL DOWDY FARM
FAYETTE CO., TN.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed Millsaps 9-91 Date
Drawn Millsaps 8-80
Traced
Approved by
Title
Title
Sheet K Drawing No.

15



PLAN MAP

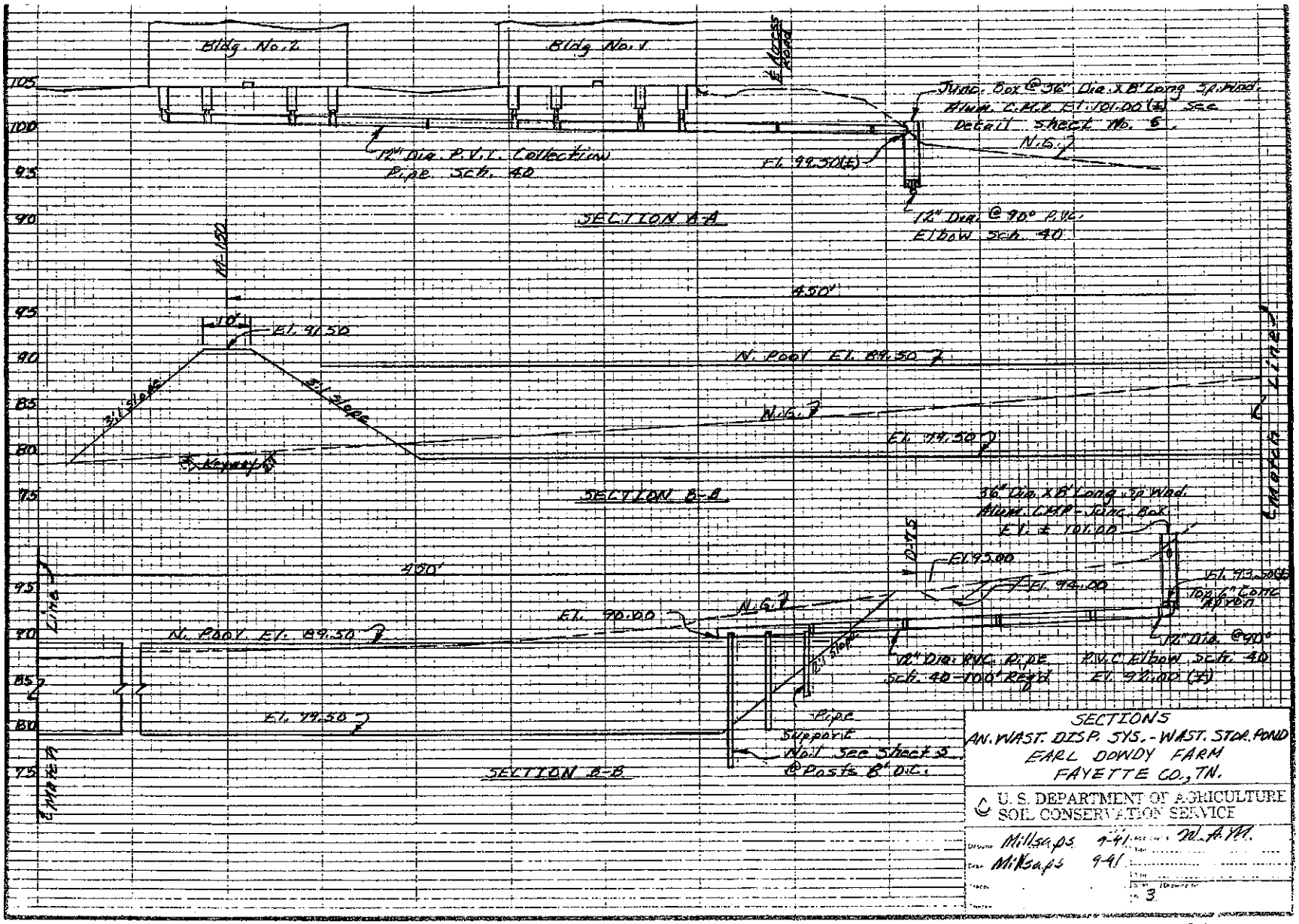
PLAN MAP
AN. WAST. SYS. - WASTE STOR. POND
EARL DOWDY FARM
FAYETTE CO., TN.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed Millsaps 9-91
Drawn Millsaps 9-91
Traced
Checked
Approved by Title Agric. Engr.
Sheet No. 2 of
Drawing No.

SCS-ENG-313A

16



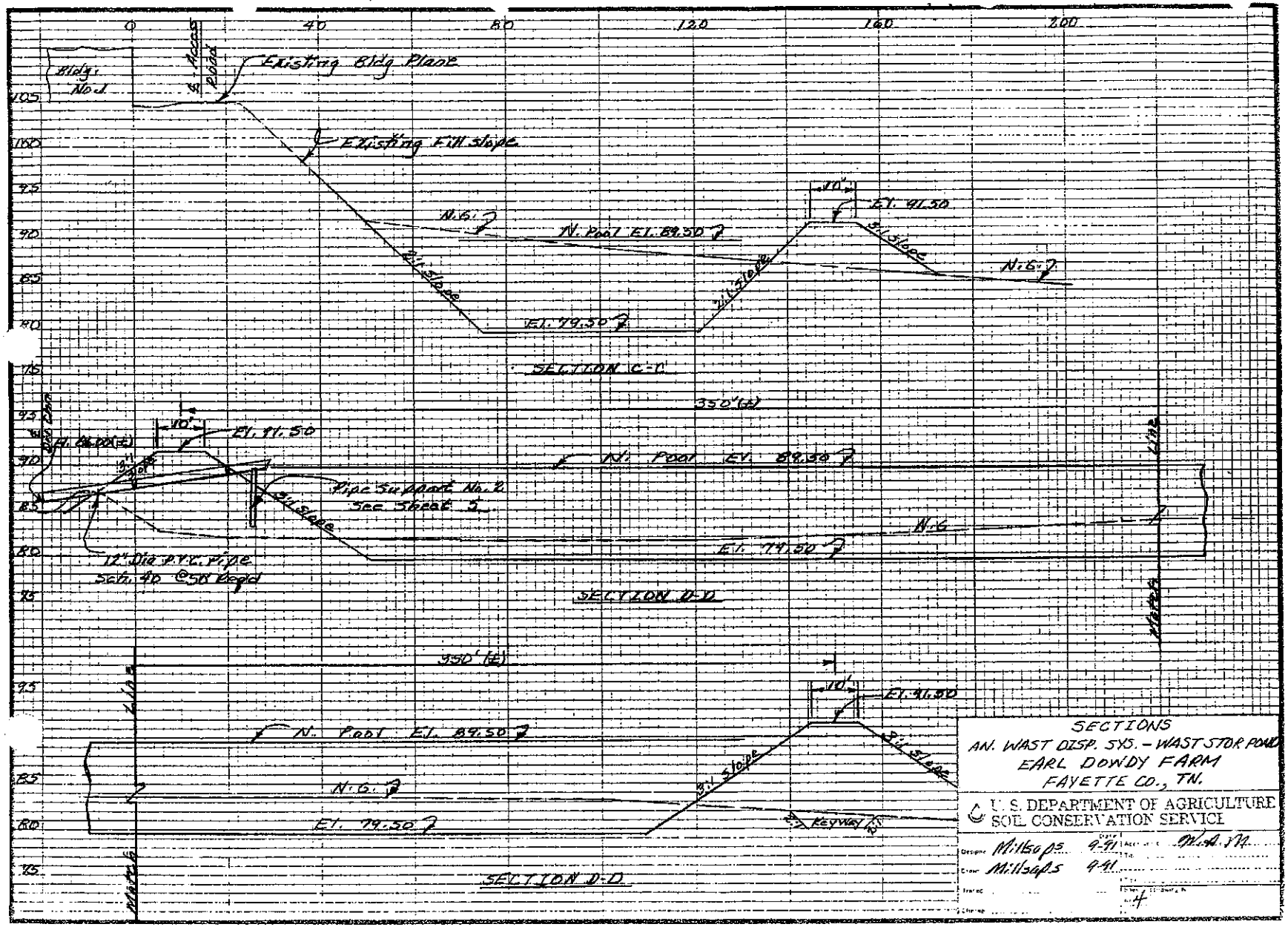
SECTIONS
AN. WAST. DISP. SYS. - WAST. STOR. POND
EARL DOWDY FARM
FAYETTE CO., TN.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Drawn Millsaps 9-91 W.A.M.
Trace Millsaps 9-91

3

17



SECTIONS
AN. WAST DISP. SYS. – WAST STOR POND
EARL DOWDY FARM
FAYETTE CO., TN.

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SOIL CONSERVATION SERVICE

Design Millsaps 9-91 Ark. 374
Draw Millsaps 9-91
Trace
Check

4

Field Identification	Acres	Crop or Rotation Description	Soil Test P	Soil Test K	Manure Application Method	Application Timing
E-1	18	Wheat, Soybean, Corn, Cotton Rotation	See Sample	See Sample	Surface Applied, Incorporated after 5 days	Mar. - Nov.
E-2	10	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-3	7	Wheat, Soybean, Corn, Cotton Rotation	See Sample	See Sample	Surface Applied, Incorporated after 5 days	Mar. - Nov.
E-4	15	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-5	8	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-6	6	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-7	19	Wheat, Soybean, Corn, Cotton Rotation	See Sample	See Sample	Surface Applied, Incorporated after 5 days	Mar. - Nov.
E-8	7	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-9	7	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
E-10/11	9	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
H-1	10	Tifton Bermuda Hay	See Sample	See Sample	Surface Applied	Mar. - Nov.
H-2	5	Wheat, Soybean, Corn, Cotton Rotation	See Sample	See Sample	Surface Applied, Incorporated after 5 days	Mar. - Nov.

Nutrient Budget Worksheet 1. Annual Nitrogen Production

1 Animal Type	2 Number[5]		3 Average Weight[6]		4 Confinement[7] period (days/year)		5 (Table 2 Page 8) Lbs TKN/day per 1000 lb. of animal		6 (Table 3 Page 10) N Availability Factor		7 PAN (lbs/year) (column 2 x (column 3÷1000) x column 4 x column 5 x column 6)
Ges. Sow	1500	x	450	÷ 1000 x	365	x	.19	x	.15	=	7021
Lac. Sow	300	x	450	÷ 1000 x	365	x	.47	x	.15	=	3473
Gilts	300	x	260	÷ 1000 x	365	x	.24	x	.15	=	1025
pigs	1800	x	5	÷ 1000 x	365	x	.60	x	.15	=	295
		x		÷ 1000 x		x		x		=	
		x		÷ 1000 x		x		x		=	
		x		÷ 1000 x		x		x		=	
		x		÷ 1000 x		x		x		=	
		x		÷ 1000 x		x		x		=	
		x		÷ 1000 x		x		x		=	

[5]See page 9 for explanation of animal numbers.
[6]See page 9 for explanation of average animal weight.
[7]See page 9 for explanation of confinement period.

11,814 ÷ 2100 = 5.6 lbs\sow\yr

Total PAN 11,814

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Nutrient Budget Worksheet 4. Nutrient Utilization

Use	Field ID	20 Crop	21 Yield Potential (Table 4)	22 N Requirement Table 4 value less other nitrogen sources.		23 Acres		24 Lbs of N Used (column 22 x column 23)	25 Fraction of total N (column 24 ÷ total PAN from box on page 16)
Fertilizer	E-1	Corn	150-175	180	x	25	=	4500	38%
Fertilizer	E-2	Bermuda Hay	6 Tons	180	x	11	=	1980	17%
Fertilizer	E-5	Hybrid Hay	9 Tons	400	x	8	=	3200	27%
Fertilizer	E-6	Hybrid Hay	9 Tons	400	x	6	=	2400	20%
Fertilizer	E-7	Corn	125 Bu	120	x	25	=	3000	25%
Fertilizer	E-8, E-9 E-10, E-11	Hybrid Hay	9 Tons	400	x	21	=	8400	71%
Fertilizer	H-1	Hybrid Hay	7 Tons	400	x	10	=	4000	33%

Sub-total = 2.26 (Fraction used for fertilizer)

Sold or Given Away + _____ (Fraction sold or given away)

Poultry Manure Fed to Cattle + _____ (Fraction used as feed)

Total 2.26 Total must be 1.0 or more

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Nutrient Budget Worksheet 2. Annual Phosphorus Production

8 Animal Type	9 Number		10 Average Weight		11 Confinement period (days/year)		12 (Table 2) Lbs P_2O_5/day per 1000 lb.of animal		13 P_2O_5/day per (column 9 x (column 10 ÷1000) x column 11 x column 12)
Ges Sow	1500	x	450	÷ 1000 x	365	x	.14	=	34492
Lac Sow	300	x	450	÷ 1000 x	365	x	.34	=	16753
Gilts	300	x	260	÷ 1000 x	365	x	.18	=	5124
Pigs	1800	x	5	÷ 1000 x	365	x	.57	=	1872
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	

Total P as P_2O_5 58,241

58,241 ÷ 2100 = 27.7 lbs/sow/yr

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Nutrient Budget Worksheet 3. Annual Potassium Production

14 Animal Type	15 Number		16 Average Weight		17 Confinement period (days/year)		18 (Table 2) Lbs K_2O/day per 1000 lb.of animal		19 K_2O (lbs/year) (column 15 x (column 16 ÷ 1000) x column 17 x column 18)
Ges Sow	1500	x	450	÷ 1000 x	365	x	.14	=	34,492
Lac Sow	300	x	450	÷ 1000 x	365	x	.36	=	17,739
Gilts	300	x	260	÷ 1000 x	365	x	.16	=	4,555
Pigs	1800	x	5	÷ 1000 x	365	x	.42	=	1379
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	
		x		÷ 1000 x		x		=	

Total K as K_2O 58,165

58,165 ÷ 2100 = 27 lbs/sow/yr

A&L Analytical Laboratories, Inc.

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2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

LAND APPLICATION ANALYSIS

Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.

SOMMERVILLE , TN 38068

Grower :
Analytical Testing

PO :

Report No: 14-139-0304
Cust No: 10982
Date Printed: 05/28/2014
Page : 1 of 1

Date Recd : 5/19/2014

Lab Number : 90713 **Sample Id :** Sample 3

Test	Analysis		Pounds Per 1000 Gallons	
	As Received	Dry Basis	As Received	Dry Basis
Nitrogen, N %	0.080		6.80	
Ammoniacal-N				
Phosphorus, P %	0.006		1.17 P_2O_5	
Potassium, K %	0.030		3.06 K_2O	
Sulfur, S %	<0.005		<0.425	
Magnesium, Mg %	0.005		0.425	
Calcium, Ca %	0.007		0.595	
Sodium, Na ppm	<250		<2.13	
Iron, Fe ppm	<50.0		<0.425	
Aluminum, Al ppm	<50.0		<0.425	
Manganese, Mn ppm	<5.00		<0.042	
Copper, Cu ppm	<2.50		<0.0212	
Zinc, Zn ppm	<5.00		<0.042	
Boron, B ppm	<25.0		<0.212	

Test	Result
Moisture %	99.7
Solid %	0.3

Additional Information	Result
Type	As Received

Additional Tests	Result
Digestion ,	Digested

Comments :

RMMA Recommended Methods of Manure Analysis, Peters et al, 2002, In Press
SW USEPA, SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, 3rd Ed. Current Revision

Oscar Ruiz

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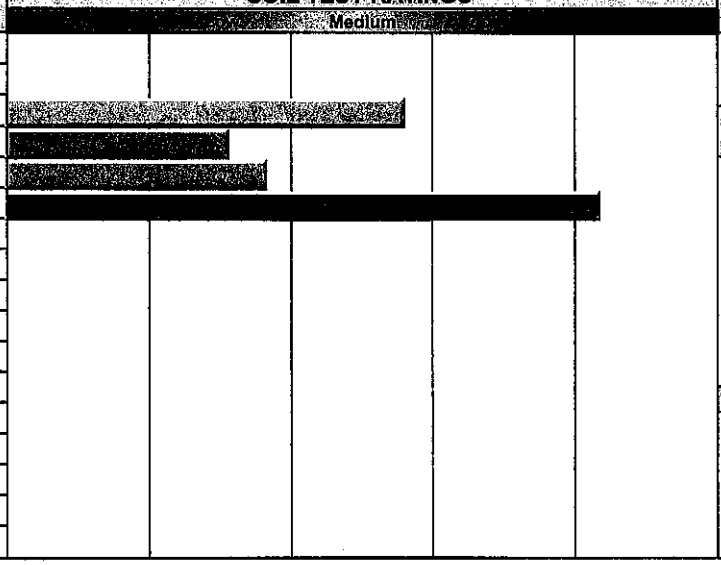
SOIL ANALYSIS

Client :	Grower :	
Dowdy Pork, LLC DOUG DOWDY 4855 OLD JACKSON RD. SOMMERVILLE TN 38068		Report No: 11-228-0569 Cust No: 10982 Date Printed: 08/17/2011 Date Received : 08/16/2011 PO: Page : 1 of 11

Lab Number : 44642 **Field Id :** **Sample Id :** E-1

Test	Method	Results
Soil pH	1:1	4.9
Buffer pH	BPH	7.77
Phosphorus (P)	M3	54 LB/ACRE
Potassium (K)	M3	150 LB/ACRE
Calcium (Ca)	M3	1252 LB/ACRE
Magnesium (Mg)	M3	414 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	1.7 % ENR 78
Nitrate Nitrogen		



Calculated Cation Exchange Capacity

6.9 meq/100g

Calculated Cation Saturation

%K	2.8
%Ca	45.4
%Mg	25.0
%H	26.7
Hmeq	1.8

K : Mg Ratio

0.11

SOIL FERTILITY GUIDELINES

Prev Crop : Soybeans

Crop : Cotton **Yield Goal :** 1000 lbs/acre **Rec Units:** LB/ACRE

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
3500 1.8	100	50	106	0						

Crop : **Rec Units:**

Comments :

Cotton

Limestone application is targeted to bring soil pH to 6.5.

- If the cotton field has a history of plants with excess vegetation reduce the nitrogen rate.
- When cotton follows soybeans, reduce N rate 10 to 20 lbs/Acre. When it follows a good legume cover crop, reduce N rate 40-50 lbs/Acre.
- Apply 0.5 to 1 lb boron(B)/Acre for cotton as a soil application. Or apply 0.5 lb boron (B) per acre at a rate of 0.25 lbs boron (B)/Acre per application with insecticide spray.
- Split N rate on cotton may be beneficial. Apply 1/2 to 2/3 of the nitrogen prior to planting and the remainder as a sidedressing at first square to first bloom.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

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SOIL ANALYSIS

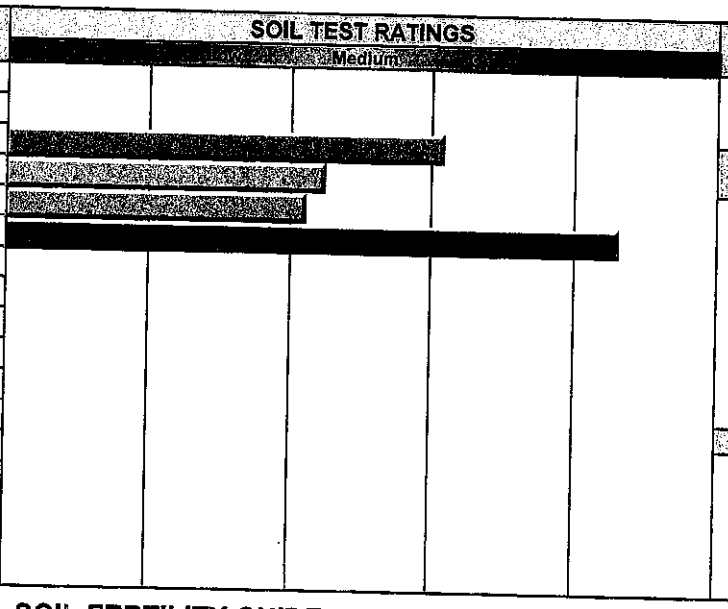
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 2 of 11

Lab Number : 44643 **Field Id :** **Sample Id :** E-2

Test	Method	Results
Soil pH	1:1	5.5
Buffer pH	BPH	7.74
Phosphorus (P)	M3	64 LB/ACRE
Potassium (K)	M3	244 LB/ACRE
Calcium (Ca)	M3	2140 LB/ACRE
Magnesium (Mg)	M3	646 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	3.0 % ENR 104
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
10.4
meq/100g

Calculated Cation Saturation

%K	3.0
%Ca	51.4
%Mg	25.9
%H	20.0
Hmeq	2.1

K : Mg Ratio
0.12

SOIL FERTILITY GUIDELINES

Crop : 'Tifton' Bermudagrass pasture **Yield Goal :** 5 tons/acre **Rec Units:** LB/ACRE

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
2500 1.3	250	56	93	0						

Crop : **Rec Units:**

Comments :

'Tifton' Bermudagrass pasture

Limestone application is targeted to bring soil pH to 6.5.

- To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

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SOIL ANALYSIS

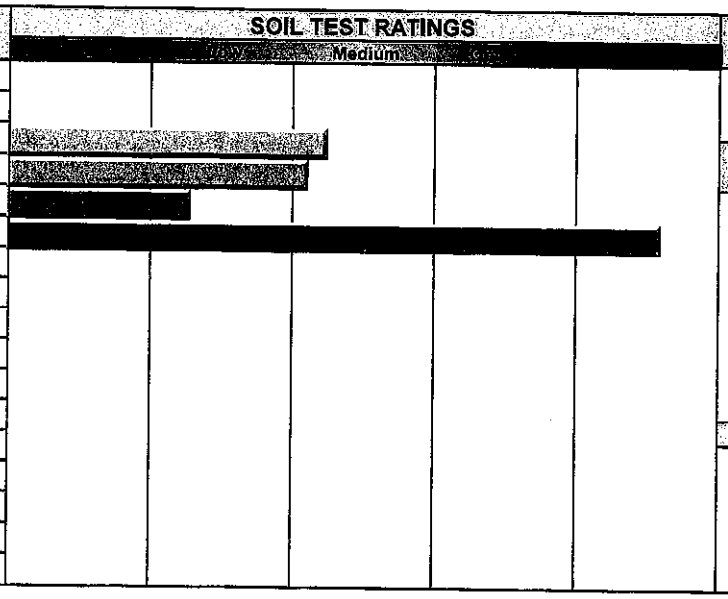
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 3 of 11

Lab Number : 44644 **Field Id :** **Sample Id :** E-3

Test	Method	Results
Soil pH	1:1	4.6
Buffer pH	BPH	7.87
Phosphorus (P)	M3	36 LB/ACRE
Potassium (K)	M3	190 LB/ACRE
Calcium (Ca)	M3	850 LB/ACRE
Magnesium (Mg)	M3	592 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	1.4 % ENR 72
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
5.9 meq/100g

Calculated Cation Saturation

%K	4.1
%Ca	36.0
%Mg	41.8
%H	17.6
Hmeq	1.0

K : Mg Ratio
0.10

SOIL FERTILITY GUIDELINES

Crop : Cotton **Yield Goal :** 1000 lbs/acre **Rec Units:** LB/ACRE

(lbs) LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
3500 1.8	100	68	95	0						

Crop : **Rec Units:**

Comments :

Cotton

Limestone application is targeted to bring soil pH to 6.5.

- If the cotton field has a history of plants with excess vegetation reduce the nitrogen rate.
- When cotton follows soybeans, reduce N rate 10 to 20 lbs/Acre. When it follows a good legume cover crop, reduce N rate 40-50 lbs/Acre.
- Apply 0.5 to 1 lb boron(B)/Acre for cotton as a soil application. Or apply 0.5 lb boron (B) per acre at a rate of 0.25 lbs boron (B)/Acre per application with insecticide spray.
- Split N rate on cotton may be beneficial. Apply 1/2 to 2/3 of the nitrogen prior to planting and the remainder as a sidedressing at first square to first bloom.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

Lab
UNITED SOIL SERVICES
108 South Crystal Lane
PO Box 226
Fairbury, Il. 61739
815-692-2626

TURNKEY SOIL SERVICES

Agent
Mark Roberson
731-697-4031

TurnKey Soil Services
127 W. Market St.
Somerville, Tn. 38068

Samples pulled on : **11 / 4 / 2013**	Grower : **Dowdy Pork LLC**	Lab # 8942
Samples pulled by : **M. Roberson**	Farm ID : Earl	Date : **11 / 12 / 2013**
Samples submitted: **11 / 6 / 2013**	Fields : E4	Acres : 15.3

Crops & Recommendations

Test	Method	Results	Rating	Common (3T)		Hybrid (4T)			
				Maintain	build (4)	Maintain	build (4)	Maintain	build (4)
soil PH %	1 : 1	5	1.5						
Buffer PH %	bPH	6.7	M3	N - 240u	*	N - 300u	*	N	*
Phos (P)	M3	64	Opt	P - 24u	*	P - 28u	*	P	*
Potash (K)	M3	188	L	K - 92u	5u	K - 101u	5u	K	*
Calcium (Ca)	M3	1869	L	*	*	*	*	*	*
Magnesium (Mg)	M3	315	Opt	*	*	*	*	*	*
Sulpher (S)	M3	23.2	L	5.5lbs	*	6.6lbs	*	*	*
Zinc (Zn)	M3	*	*	*	*	*	*	*	*
Iron (Fe)	M3	*	*	*	*	*	*	*	*
Manganese (Mn)	M3	*	*	*	*	*	*	*	*
Copper (Cu)	M3	*	*	*	*	*	*	*	*
Boron (B)	M3	*	*	*	*	*	*	*	*
Organic Matter (OM)	WB	2.2	*	*	*	*	*	*	*

Base Saturations	(%)	Lime Recommendations (in tons / ac)
Cation Exchange Capacity - CEC	10.4	* Apply 2 tons of lime / acre in fall & 2 tons of lime / acre in spring of 2014
Potassium - % K	2.3	
Calcium - % Ca	45.0	*
Magnesium - % Mg	12.7	
Hydrogen - % H	40.0	*

Comments / suggestions

* Split applications of N for maximum results. Apply 60 units before ist cutting and after each cutting as the bermuda begins 2" of greening. Recommendation based on 3 cuttings commom & 4 cuttings hybrid

* to avoid controlling weeds with chemical and hasten bermuda greening, burn off fields of bermuda around March 1st or after dander of freeze is past. May increase yield by as much as 1/2 ton

* Sulfur - for best utilization of sulfur apply no sooner than 4 to 5 weeks before cuttings. Normal uptake of sulfur in bermuda is around 5lbs / ton yield.

*

Lab
UNITED SOIL SERVICES
108 South Crystal Lane
PO Box 226
Fairbury, Il. 61739
815-692-2626

TURNKEY SOIL SERVICES

Agent
Mark Roberson
731-697-4031

TurnKey Soil Services
127 W. Market St.
Somerville, Tn. 38068

Samples pulled on : **11 / 4 / 2013**	Grower : **Dowdy Pork LLC**	Lab # 8946
Samples pulled by : **M. Roberson**	Farm ID : Earl	Date : **11 / 12 / 2013**
Samples submitted: **11 / 6 / 2013**	Fields : E5	Acres : 7.7

Crops & Recommendations

Test	Method	Results	Rating	Common (3T)		Hybrid (4T)			
soil PH %	1:1	5.9	0.6	Maintain	build (4)	Maintain	build (4)	Maintain	build (4)
Buffer PH %	bPH	7.0	M3	N - 240u	*	N - 300u	*	N	*
Phos (P)	M3	250	VH	P - 0	*	P - 0	*	P	*
Potash (K)	M3	312	Opt	K - 36u	*	K - 45u	*	K	*
Calcium (Ca)	M3	2205	M	*	*	*	*	*	*
Magnesium (Mg)	M3	315	Opt	*	*	*	*	*	*
Sulpher (S)	M3	30.7	M	3.3lbs	*	4.0lbs	*	*	*
Zinc (Zn)	M3	*	*	*	*	*	*	*	*
Iron (Fe)	M3	*	*	*	*	*	*	*	*
Manganese (Mn)	M3	*	*	*	*	*	*	*	*
Copper (Cu)	M3	*	*	*	*	*	*	*	*
Boron (B)	M3	*	*	*	*	*	*	*	*
Organic Matter (OM)	WB	2.1	*	*	*	*	*	*	*

Base Saturations	(%)	Lime Recommendations (in tons / ac)
Cation Exchange Capacity - CEC	9.3	* Apply 3,000lbs of lime in late fall or winter
Potassium - % K	4.3	
Calcium - % Ca	59.5	*
Magnesium - % Mg	14.2	
Hydrogen - % H	22.0	*

Comments / suggestions

* Split applications of N for maximum results. Apply 60 units before ist cutting and after each cutting as the bermuda begins 2" of greening. Recommendation based on 3 cuttings commom & 4 cuttings hybrid

* to avoid controlling weeds with chemical and hasten bermuda greening, burn off fields of bermuda around March 1st or after dander of freeze is past. May increase yield by as much as 1/2 ton

* Sulfur - for best utilization of sulfur apply no sooner than 4 to 5 weeks before cuttings. Normal uptake of sulfur in bermuda is around 5lbs / ton yield.

*

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815-692-2626

TURNKEY SOIL SERVICES

Agent
Mark Roberson
731-697-4031

TurnKey Soil Services
127 W. Market St.
Somerville, Tn. 38068

Samples pulled on : **11 / 4 / 2013**	Grower : **Dowdy Pork LLC**	Lab # 8947
Samples pulled by : **M. Roberson**	Farm ID : Earl	Date : **11 / 12 / 2013**
Samples submitted: **11 / 6 / 2013**	Fields : E6	Acres : 5.9

Crops & Recommendations

Test	Method	Results	Rating	Common (3T)		Hybrid (4T)			
soil PH %	1 : 1	6.2	0.3	Maintain	build (4)	Maintain	build (4)	Maintain	build (4)
Buffer PH %	bPH	7.0	M3	N - 240u	*	N - 300u	*	N	*
Phos (P)	M3	250	VH	P - 0	*	P - 0	*	P	*
Potash (K)	M3	252	M	K - 70u	*	K - 82u	*	K	*
Calcium (Ca)	M3	3087	Opt	*	*	*	*	*	*
Magnesium (Mg)	M3	168	L	*	*	*	*	*	*
Sulpher (S)	M3	*	*	*	*	*	*	*	*
Zinc (Zn)	M3	*	*	*	*	*	*	*	*
Iron (Fe)	M3	*	*	*	*	*	*	*	*
Manganese (Mn)	M3	*	*	*	*	*	*	*	*
Copper (Cu)	M3	*	*	*	*	*	*	*	*
Boron (B)	M3	*	*	*	*	*	*	*	*
Organic Matter (OM)	WB	2.0	*	*	*	*	*	*	*

Base Saturations	(%)	Lime Recommendations (in tons / ac)
Cation Exchange Capacity - CEC	10.4	* Apply 1500 lbs lime / acre in late fall or winter
Potassium - % K	3.1	
Calcium - % Ca	74.2	*
Magnesium - % Mg	6.7	
Hydrogen - % H	16.0	*

Comments / suggestions

* Split applications of N for maximum results. Apply 60 units before ist cutting and after each cutting as the bermuda begins 2" of greening. Recommendation based on 3 cuttings commom & 4 cuttings hybrid

* to avoid controlling weeds with chemical and hasten bermuda greening, burn off fields of bermuda around March 1st or after dander of freeze is past. May increase yield by as much as 1/2 ton

*

*

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2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

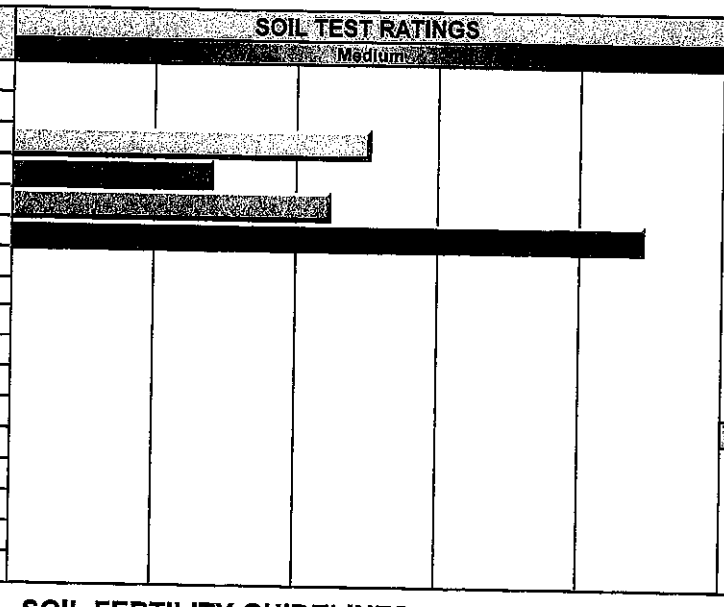
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 6 of 11

Lab Number : 44647 **Field Id :** **Sample Id :** E-7

Test	Method	Results
Soil pH	1:1	6.2
Buffer pH	BPH	7.70
Phosphorus (P)	M3	48 LB/ACRE
Potassium (K)	M3	168 LB/ACRE
Calcium (Ca)	M3	2696 LB/ACRE
Magnesium (Mg)	M3	720 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	2.2 % ENR 88
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
12.4
meq/100g

Calculated Cation Saturation

%K	1.7
%Ca	54.4
%Mg	24.2
%H	19.4
Hmeq	2.4

K : Mg Ratio
0.07

SOIL FERTILITY GUIDELINES

Crop : 'Tifton' Bermudagrass pasture **Yield Goal :** 5 tons/acre **Rec Units:** LB/ACRE

LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
0.8	250	72	111	0						

Crop : **Rec Units:**

Comments :

'Tifton' Bermudagrass pasture

Limestone application is targeted to bring soil pH to 6.5.

- To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

RECEIVED
JUN 27 2014

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440
www.allabs.com

SOIL ANALYSIS

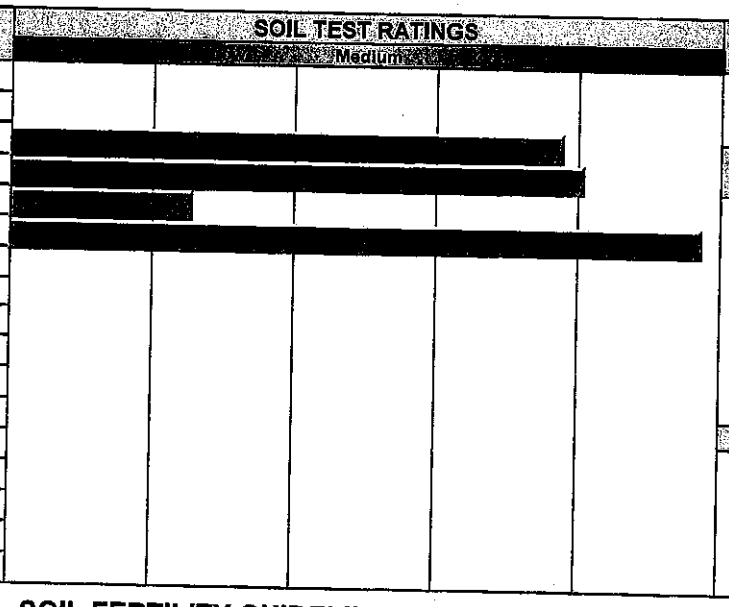
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 7 of 11

Lab Number : 44648 **Field Id :** **Sample Id :** E-8

Test	Method	Results
Soil pH	1:1	5.2
Buffer pH	BPH	7.66
Phosphorus (P)	M3	98 LB/ACRE
Potassium (K)	M3	382 LB/ACRE
Calcium (Ca)	M3	1500 LB/ACRE
Magnesium (Mg)	M3	876 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	2.5 % ENR 94
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
10.6 meq/100g

Calculated Cation Saturation

%K	4.6
%Ca	35.4
%Mg	34.4
%H	25.7
Hmeq	2.7

K : Mg Ratio
0.13

SOIL FERTILITY GUIDELINES

Prev Crop : Corn

Crop : Soybeans **Yield Goal :** 50 bu/acre **Rec Units:** LB/ACRE

LIME (lbs)	LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
3500	1.8	0	30	47	0						

Crop : Corn **Yield Goal :** 150 bu/acre **Rec Units:** LB/ACRE

3500	1.8	183	45	49	0						

Comments :

Soybeans

Limestone application is targeted to bring soil pH to 6.5.

· For soybeans on soils with a pH of 6.2 or less, apply limestone as recommended or plant seed treated with molybdenum. Apply 1-2 oz of sodium molybdate (0.4-0.8 oz of elemental molybdenum) per acre as a seed treatment.

Corn

Limestone application is targeted to bring soil pH to 6.5.

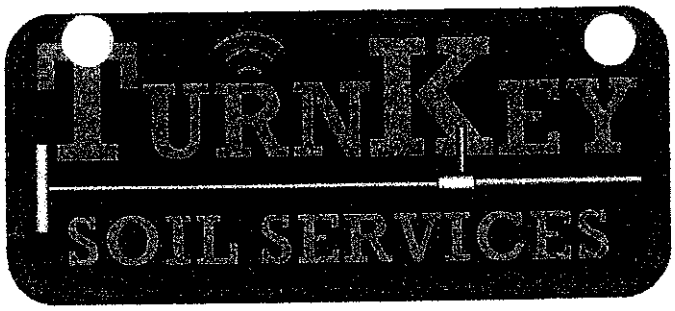
· Greater N efficiency for corn may be achieved by splitting the N application. Apply 1/4 to 1/3 of the N prior to or at planting and the remainder as sidedress when corn is 8-24 inches high.

· For early planted corn or no till corn, apply a starter fertilizer at least 2 inches from the seed at a rate of 10-20 lbs N/Acre and 30-60 lbs P2O5/Acre.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

Lab
UNITED SOIL SERVICES
108 South Crystal Lane
PO Box 226
Fairbury, Il. 61739
815-692-2626



Agent
Mark Roberson
731-697-4031

TurnKey Soil Services
127 W. Market St.
Somerville, Tn. 38068

Samples pulled on : **11/6/2013**	Grower : **Dowdy Pork LLC**	Lab # 9250
Samples pulled by : **M. Roberson**	Farm ID : **Earl**	Date : **11/16/2013**
Samples submitted: **11/12/2013**	Fields : E9	Acres : 6.5

Crops & Recommendations

Test	Method	Results	Rating	Common (3T)		Hybrid (4T)			
				Maintain	build (4)	Maintain	build (4)	Maintain	build (4)
soil PH %	1:1	**6.1**	0.4						
Buffer PH %	bPH	**6.9**	**M3**	**N - 240u**	*	**N - 300u**	*	**N**	*
Phos (P)	M3	**250**	VH	**P - 0**	*	**P - 0**	*	**P**	*
Potash (K)	M3	**408**	VH	**K - 11u**	*	**K - 14u**	*	**K**	*
Calcium (Ca)	M3	**2058**	M	*	*	*	*	*	*
Magnesium (Mg)	M3	**399**	H	*	*	*	*	*	*
Sulpher (S)	M3	*	*	*	*	*	*	*	*
Zinc (Zn)	M3	*	*	*	*	*	*	*	*
Iron (Fe)	M3	*	*	*	*	*	*	*	*
Manganese (Mn)	M3	*	*	*	*	*	*	*	*
Copper (Cu)	M3	*	*	*	*	*	*	*	*
Boron (B)	M3	*	*	*	*	*	*	*	*
Organic Matter (OM)	WB	**2.2**	*	*	*	*	*	*	*

Base Saturations	(%)	Lime Recommendations (in tons / ac)
Cation Exchange Capacity - CEC	**8.9**	* **Apply 1 ton of lime / acre in late fall or winter**
Potassium - % K	**5.8**	
Calcium - % Ca	**57.5**	*
Magnesium - % Mg	**18.6**	
Hydrogen - % H	**18.0**	*

Comments / suggestions

* Split applications of N for maximum results. Apply 60 units before ist cutting and after each cutting as the bermuda begins 2" of greening. Recommendation based on 3 cuttings commom & 4 cuttings hybrid

* to avoid controlling weeds with chemical and hasten bermuda greening, burn off fields of bermuda around March 1st or after dander of freeze is past. May increase yield by as much as 1/2 ton

*

*

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A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

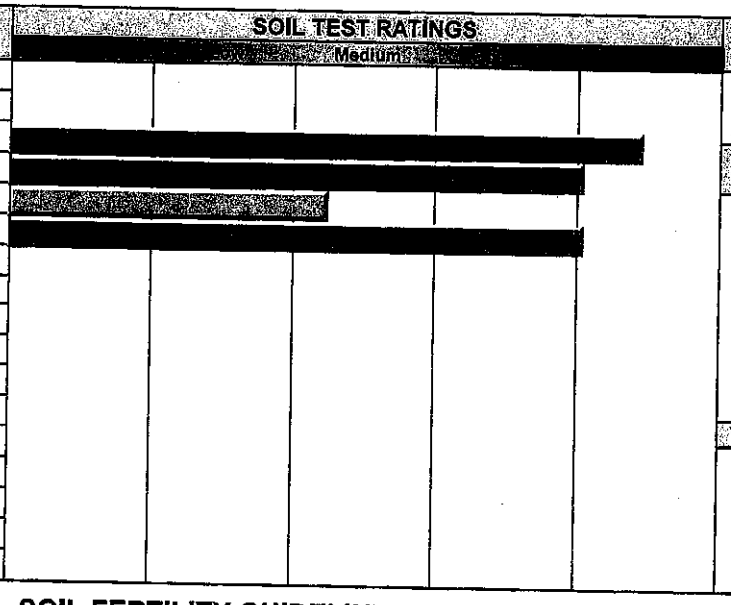
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 9 of 11

Lab Number : 44650 **Field Id :** **Sample Id :** E-10

Test	Method	Results
Soil pH	1:1	6.0
Buffer pH	BPH	7.77
Phosphorus (P)	M3	152 LB/ACRE
Potassium (K)	M3	338 LB/ACRE
Calcium (Ca)	M3	1814 LB/ACRE
Magnesium (Mg)	M3	366 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	2.2 % ENR 88
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
8.3 meq/100g

Calculated Cation Saturation

%K	5.2
%Ca	54.6
%Mg	18.4
%H	22.2
Hmeq	1.8

K : Mg Ratio
0.28

SOIL FERTILITY GUIDELINES

Crop : 'Tifton' Bermudagrass pasture **Yield Goal :** 5 tons/acre **Rec Units:** LB/ACRE

LIME (lbs)	LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
1500	0.8	250	30	37	0						

Crop : **Rec Units:**

Comments :

'Tifton' Bermudagrass pasture

Limestone application is targeted to bring soil pH to 6.5.

- To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

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A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

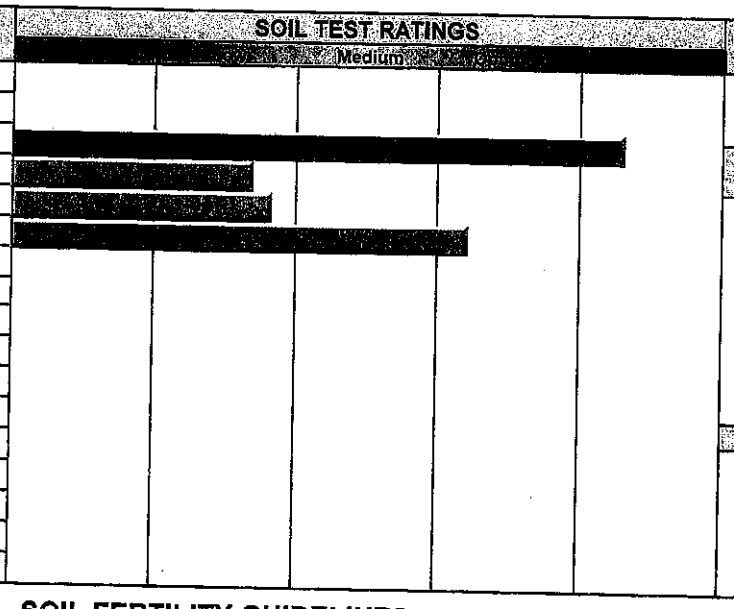
Client :
Dowdy Pork, LLC
DOUG DOWDY
4855 OLD JACKSON RD.
SOMMERVILLE TN 38068

Grower :

Report No: 11-228-0569
Cust No: 10982
Date Printed: 08/17/2011
Date Received : 08/16/2011
PO:
Page : 10 of 11

Lab Number : 44651 **Field Id :** **Sample Id :** E-11

Test	Method	Results
Soil pH	1:1	5.3
Buffer pH	BPH	7.69
Phosphorus (P)	M3	132 LB/ACRE
Potassium (K)	M3	156 LB/ACRE
Calcium (Ca)	M3	1434 LB/ACRE
Magnesium (Mg)	M3	304 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	2.2 % ENR 88
Nitrate Nitrogen		



Calculated Cation Exchange Capacity
7.5 meq/100g

Calculated Cation Saturation

%K	2.7
%Ca	47.8
%Mg	16.9
%H	33.1
Hmeq	2.5

K : Mg Ratio
0.16

SOIL FERTILITY GUIDELINES

Crop : 'Tifton' Bermudagrass pasture **Yield Goal :** 5 tons/acre **Rec Units:** LB/ACRE

LIME (lbs)	LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
3000	1.5	250	30	105	0						

Crop : **Rec Units:**

Comments :

'Tifton' Bermudagrass pasture

Limestone application is targeted to bring soil pH to 6.5.

- To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440
www.allabs.com

SOIL ANALYSIS

Client :	Grower :	
Dowdy Pork, LLC DOUG DOWDY 4855 OLD JACKSON RD. SOMMERVILLE TN 38068		Report No: 11-228-0569 Cust No: 10982 Date Printed: 08/17/2011 Date Received : 08/16/2011 PO: Page : 11 of 11

Lab Number : 44652 **Field Id :** **Sample Id :** H-1

Test	Method	Results
Soil pH	1:1	5.3
Buffer pH	BPH	7.70
Phosphorus (P)	M3	64 LB/ACRE
Potassium (K)	M3	146 LB/ACRE
Calcium (Ca)	M3	2546 LB/ACRE
Magnesium (Mg)	M3	382 LB/ACRE
Sulfur (S)		
Boron (B)		
Copper (Cu)		
Iron (Fe)		
Manganese (Mn)		
Zinc (Zn)		
Sodium (Na)		
Soluble Salts		
Organic Matter	LOI	2.7 % ENR 98
Nitrate Nitrogen		

SOIL TEST RATINGS

Medium

Calculated Cation Exchange Capacity

10.5 meq/100g

Calculated Cation Saturation

%K	1.8
%Ca	60.6
%Mg	15.2
%H	22.9
Hmeq	2.4

K : Mg Ratio

0.12

SOIL FERTILITY GUIDELINES

Crop : 'Tifton' Bermudagrass pasture **Yield Goal :** 5 tons/acre **Rec Units:** LB/ACRE

LIME (lbs)	LIME (tons)	N	P_2O_5	K_2O	Mg	S	B	Cu	Mn	Zn	Fe
3000	1.5	250	56	116	0						

Crop : **Rec Units:**

Comments :

'Tifton' Bermudagrass pasture

Limestone application is targeted to bring soil pH to 6.5.

- To establish coastal or hybrid bermuda apply the phosphorus and potassium and 30 to 50 lbs N/acre before sprigging.
- After sprigs start to grow, topdress with 40-60 lbs N/Acre. Topdress with an additional 30-40 lbs N/Acre in August or early September if needed.
- For grass hay apply 50 lbs. N/Acre for each ton of expected yield. The normal range is 200-500 lbs. N/Acre. Apply 75-100 lbs. N/Acre when spring growth begins and 75-100 lbs. N/Acre after each harvest.
- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For soils low in sulfur, apply 20-40 lbs of sulfur as a sulfate in the spring with the nitrogen.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

BPH - Lime Index M3 - Mehlich 3 LOI - Loss On Ignition 1:1 - Water pH

Analysis prepared by: A&L Analytical Laboratories, Inc.

Lab
UNITED SOIL SERVICES
108 South Crystal Lane
PO Box 226
Fairbury, Il. 61739
815-692-2626

Agent
Mark Roberson
731-697-4031

TurnKey Soil Services
127 W. Market St.
Somerville, Tn. 38068

Samples pulled on : **11/6/2013**	Grower : **Dowdy Pork LLC**	Lab # 9266
Samples pulled by : **M. Roberson**	Farm ID : **Home Farm**	Date : **11/16/2013**
Samples submitted: **11/12/2013**	Fields : H2	Acres : 4.18

Crops & Recommendations

Test	Method	Results	Rating	Common (3T)		Hybrid (4T)			
				Maintain	build (4)	Maintain	build (4)	Maintain	build (4
soil PH %	1:1	5.1	1.4	N - 240u	*	N - 300u	*	N	*
Buffer PH %	bPH	6.8	M3	P - 0	*	P - 0	*	P	*
Phos (P)	M3	250	VH	K - 75u	*	K - 86u	*	K	*
Potash (K)	M3	252	M	*	*	*	*	*	*
Calcium (Ca)	M3	987	VL	*	*	*	*	*	*
Magnesium (Mg)	M3	105	L	*	*	*	*	*	*
Sulpher (S)	M3	*	*	*	*	*	*	*	*
Zinc (Zn)	M3	*	*	*	*	*	*	*	*
Iron (Fe)	M3	*	*	*	*	*	*	*	*
Manganese (Mn)	M3	*	*	*	*	*	*	*	*
Copper (Cu)	M3	*	*	*	*	*	*	*	*
Boron (B)	M3	*	*	*	*	*	*	*	*
Organic Matter (OM)	WB	2.0	*	*	*	*	*	*	*

Base Saturations	(%)	Lime Recommendations (in tons / ac)
Cation Exchange Capacity - CEC	5.2	* Apply 7,000lbs of lime - a split application is preferred. Appl
Potassium - % K	6.2	2 tons in late fall or winter - apply 3,000lbs in summer
Calcium - % Ca	47.4	*
Magnesium - % Mg	8.4	
Hydrogen - % H	38.0	*

Comments / suggestions

* Split applications of N for maximum results. Apply 60 units before ist cutting and after each cutting as the bermuda begins 2" of greening. Recommendation based on 3 cuttings commom & 4 cuttings hybrid

* to avoid controlling weeds with chemical and hasten bermuda greening, burn off fields of bermuda around March 1st or after dander of freeze is past. May increase yield by as much as 1/2 ton

*

*

Bermuda Hay

N Efficiency Coefficient
Non-incorporation: 50% or .5
Incorporated within 12 hours: 80% or .8
Incorporated at application: 100% or 1

P Efficiency Coefficient
Phosphorus coefficient: 100% or 1

Acronyms:
ac = acre
gal = gallons
in = inch
N = nitrogen
P (P_2O_5) = phosphorus

All liquid manure analysis results are in Lbs/1,000 gal of nutrient tested.

There is 27,154 gal/ac. inch of liquid. Therefore:
1" = 27,154 gal/ac. in
1/2" = 13,577 gal
1/4" = 6,788.5 gal
3/4" = 20,365.5 gal

1 Manure Analysis Results: 6.8 N lbs/1,000 gal; 1.17 P_2O_5 lbs/1,000 gal

2 Nitrogen and Phosphrus Needs for Your Crop

a. Plant removal rates for your crop (See MMP Crop Information for Tennessee):
460 N lbs/ac.; 120 P_2O_5 lbs/ac.

b. List the Nitrogen and Phosphorus Coeffiency Based on Your Application Method:
0.5 N; 1 P_2O_5

c. Multiply N content in manure analysis (step 1) by (Nitrogen Efficiency Coefficient (step 2b.):
6.8 lbs/gal X 0.5 gal/ac. in = 3.4

d. Calculate your Application rates:

1- N Rate = Plant Removal Rate (Step 2a.) divided by Nitrogen Content in Manure Analysis (Step 2c.)

460 divided by 3.4 X 1000 = 135294 gal/ac. for N rate

2- P_2O_5 Rate = Plant Removal Rate for P_2O_5 (step 2a.) divided by P_2O_5 Content in Manure Anlaysis (Step 2c.)

120 divided by 1.17 X 1000 = 102564 gal/ac. for P_2O_5 rate

Remember that if your soils are "high" or "very high" in Phosphorus, you must run the TN Phosphorus Index. This will assist you in determining your rate of application If you are wanting to decrease the phosphorus content in your soils, decreasing the amount and frequency of application in conjunction with proper crop rotations will, in time, decrease the overall phosphorus content in your soil. Aplying more waste than specified in your Nutrient Management Plan will be a violation of your CAFO permit.

Cotton

N Efficiency Coefficient
Non-incorporation: 50% or .5
Incorporated within 12 hours: 80% or .8
Incorporated at application: 100% or 1

P Efficiency Coefficient
Phosphorus coefficient: 100% or 1

Acronyms:
ac = acre
gal = gallons
in = inch
N = nitrogen
P (P_2O_5) = phosphorus

All liquid manure analysis results are in Lbs/1,000 gal of nutrient tested.

There is 27,154 gal/ac. inch of liquid. Therefore:
1" = 27,154 gal/ac. in
1/2" = 13,577 gal
1/4" = 6,788.5 gal
3/4" = 20,365.5 gal

1. Manure Analysis Results: 6.2 N lbs/1,000 gal; 1.17 P_2O_5 lbs/1,000 gal

2. Nitrogen and Phosphorus Needs for Your Crop

a. Plant removal rates for your crop (See MMP Crop Information for Tennessee): 90 N lbs/ac.; 35 P_2O_5 lbs/ac.

b. List the Nitrogen and Phosphorus Coefficency Based on Your Application Method: 0.5 N; 1 P_2O_5

c. Multiply N content in manure analysis (step 1) by (Nitrogen Efficiency Coefficient (step 2b): 6.8 lbs/gal x 0.5 gal/ac. in = 3.4

d. Calculate your Application rates:

1. N Rate = Plant Removal Rate (Step 2a) divided by Nitrogen Content in Manure Analysis (Step 2c)

90 divided by 3.4 X 1000 = 26,471 gal/ac. for N rate

2. P_2O_5 Rate = Plant Removal Rate for P_2O_5 (Step 2a) divided by P_2O_5 Content in Manure Analysis (Step 2c)

35 divided by 1.17 X 1000 = 29,915 gal/ac. for P_2O_5 rate

Remember that if your soils are "high" or "very high" in Phosphorus, you must run the TN Phosphorus Index. This will assist you in determining your rate of application if you are wanting to decrease the phosphorus content in your soils. decreasing the amount and frequency of application in conjunction with proper crop rotations will, in time, decrease the overall phosphorus content in your soil. Applying more waste than specified in your Nutrient Management Plan will be a violation of your CAFO permit

Corn

N Efficiency Coefficient

Non-incorporation 50% or .5

Incorporated within 12 hours 80% or .8

Incorporated at application 100% or 1

P Efficiency Coefficient

Phosphorus coefficient 100% or 1

Acronyms:

ac acre | in inch | [illegible]

gal gallon | N nitrogen

All liquid manure analysis results are in lbs/1,000 gal of nutrient tested

[illegible] 27,154 gal/ac [illegible] liquid

1" = 27,154 gal/ac [illegible] | 1/2 = 13,577 [illegible]

1/4 = [illegible],788.5 gal | 3/4 = 20,365.5 gal

1 Manure Analysis Result: 6.8 N lbs/1,000 gal 1.17 P₂O₅ lbs/1,000 gal

2 Nitrogen and Phosphorus Needs for Your Crop

a. Plant removal rates for your crop (See MMP [illegible] information for Tennessee)

150 N lbs/ac 88 P₂O₅ lbs/ac

b. List the Nitrogen and Phosphorus Coefficiency Based on Your Application Method

0.5 N 1 P₂O₅

c. Multiply N content in manure analysis (step 1) by (Nitrogen Efficiency Coefficient (step 2b))

6.8 lbs/gal x 0.5 gal/ac = 3.4

d. Calculate your Application rates

i. N Rate = Plant Removal Rate (step 2a) divided by Nitrogen Content in Manure Analysis (step 2c)

150 divided by 3.4 x 1000 = 44,118 gal/ac for N rate

ii. P₂O₅ Rate = Plant Removal Rate for P₂O₅ (step 2a) divided by P₂O₅ Content in Manure Analysis (Step 2c)

88 divided by 1.17 x 1000 = 75214 gal/ac for P₂O₅ rate

[illegible] that if your soil test [illegible] "high" or "very high" in Phosphorus, you must run the TN Phosphorus Index. This will assist you in determining your rate of application [illegible] you are wanting to decrease the phosphorus content in your soil, decreasing the amount and frequency of application [illegible] in conjunction with proper crop rotations will [illegible] decrease the overall phosphorus content in your soil. Applying more waste than specified in your Nutrient Management Plan will be a violation of your CAFO [illegible]

Wheat

N Efficiency Coefficient
Non-incorporation: 50% or .5
Incorporated within 12 hours: 80% or .8
Incorporated at application: 100% or 1

P Efficiency Coefficient
Phosphorus coefficient: 100% or 1

Acronyms:
ac = acre
gal = gallons
in = inch
N = nitrogen
P (P_2O_5) = phosphorus

All liquid manure analysis results are in Lbs/1,000 gal of nutrient tested.

There is 27,154 gal/ac inch of liquid. Therefore:
1" = 27,154 gal/ac. in
1/2" = 13,577 gal
1/4" = 6,788.5 gal
3/4" = 20,365.5 gal

1 Manure Analysis Results: 6.8 N lbs/1,000 gal; 1.17 P_2O_5 lbs/1,000 gal

2 Nitrogen and Phosphrus Needs for Your Crop

a. Plant removal rates for your crop (See MMP Crop Information for Tennessee):
117 N lbs/ac.; 45 P_2O_5 lbs/ac.

b. List the Nitrogen and Phosphorus Coeffiency Based on Your Application Method:
0.5 N; 1 P_2O_5

c. Multiply N content in manure analysis (step 1) by (Nitrogen Efficiency Coefficient (step 2b.):
6.8 lbs/gal X 0.5 gal/ac. in = 3.4

d Calculate your Application rates:

1- N Rate = Plant Removal Rate (Step 2a.) divided by Nitrogen Content in Manure Analysis (Step 2c.)
117 divided by 3.4 X 1000 = 34,412 gal/ac. for N rate

2- P_2O_5 Rate = Plant Removal Rate for P_2O_5 (step 2a.) divided by P_2O_5 Content in Manure Anlaysis (Step 2c.)
45 divided by 1.17 X 1000 = 38,462 gal/ac. for P_2O_5 rate

Remember that if your soils are "high" or "very high" in Phosphorus, you must run the TN Phosphorus Index. This will assist you in determining your rate of application. If you are wanting to decrease the phosphorus content in your soils, decreasing the amount and frequency of application in conjunction with proper crop rotations will, in time, decrease the overall phosphorus content in your soil. Aplying more waste than specified in your Nutrient Management Plan will be a violation of your CAFO permit.

40

60 Bu

Soybeans

N Efficiency Coefficient
Non-incorporation: 50% or .5
Incorporated within 12 hours: 80% or .8
Incorporated at application: 100% or 1

P Efficiency Coefficient
Phosphorus coefficient: 100% or 1

Acronyms:
ac = acre
gal = gallons
in = inch
N = nitrogen
P (P_2O_5) = phosphorus

All liquid manure analysis results are in Lbs/1,000 gal of nutrient tested.

There is 27,154 gal/ac. inch of liquid. Therefore:
1" = 27,154 gal/ac. in
1/2" = 13,577 gal
1/4" = 6,788.5 gal
3/4" = 20,365.5 gal

1. Manure Analysis Results: 6.8 N lbs/1,000 gal; 1.17 P_2O_5 lbs/1,000 gal

2. Nitrogen and Phosphrus Needs for Your Crop

a. Plant removal rates for your crop (See MMP Crop Information for Tennessee):
240 N lbs/ac.; 48 P_2O_5 lbs/ac.

b. List the Nitrogen and Phosphorus Coeffiency Based on Your Application Method:
0.5 N; 1 P_2O_5

c. Multiply N content in manure analysis (step 1) by (Nitrogen Efficiency Coefficient (step 2b.):
6.8 lbs/gal X 0.5 gal/ac. in = 3.4

d. Calculate your Application rates:

1- N Rate = Plant Removal Rate (Step 2a.) divided by Nitrogen Content in Manure Analysis (Step 2c.)

240 divided by 3.4 X 1000 = 70,588 gal/ac. for N rate

2- P_2O_5 Rate = Plant Removal Rate for P_2O_5 (Step 2a.) divided by P_2O_5 Content in Manure Anlaysis (Step 2c.)

48 divided by 1.17 X 1000 = 41,026 gal/ac. for P_2O_5 rate

Remember that if your soils are "high" or "very high" in Phosphorus, you must run the TN Phosphorus Index. This will assist you in determining your rate of application. If you are wanting to decrease the phosphorus content in your soils, decreasing the amount and frequency of application in conjunction with proper crop rotations will, in time, decrease the overall phosphorus content in your soil. Aplying more waste than specified in your Nutrient Management Plan will be a violation of your CAFO permit.

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Date			Size	Rate		Application		Nutrients Applied (Manure)			Nutrients Applied (Commercial)			Plant Uptake			Balance After Removal		
Mo/Yr	Yield Goal	Field Name/ Number	Acres	Based on N or P (1 Yr P, 2Yr P, etc.)	Soil Test Results L, M, H, VH	Crop	Rate/ Acre (th gals per acre)	N lb/A	P2O5 lb/A	K2O lb/A	N lb/A	P2O5 lb/A	K2O lb/A	Rem. Rate N	Rem. Rate P2O5	Rem. Rate K2O	N lb/ A	P2O5 lb/A	K2O lb/A
2013		E-1															Nutrients Available via Soil Sample:	0	54	150
4-10/14	90bu/60bu	E-1	18	1 YR P	M	Wh, SB	80	272	93	245	102	0	0	357	93	116	17	54	279
4-10/15	200bu	E-1	18	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	156	54	451
4-10/16	2.5 Bales	E-1	18	1 YR P	M	Cotton	30	102	35	92	0	0	0	90	35	48	168	54	495
4-10/17	90bu/60bu	E-1	18	1 YR P	M	Wh, SB	80	272	93	245	0	0	0	357	93	116	185	54	624
4-10/18	200bu	E-1	18	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	324	54	796
2013		E-2															Nutrients Available via Soil Sample:	0	64	244
4-10/14	10tn	E-2	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	61	170
4-10/15	10tn	E-2	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	58	96
4-10/16	10tn	E-2	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-54	55	22
4-10/17	10tn	E-2	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-72	52	-52
4-10/18	10tn	E-2	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-90	49	-126
2013		E-3															Nutrients Available via Soil Sample:	0	36	190
4-10/14	90bu/60bu	E-3	7	1 YR P	M	Wh, SB	80	272	93	245	102	0	0	357	93	116	17	36	319
4-10/15	200bu	E-3	7	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	156	36	491
4-10/16	2.5 Bales	E-3	7	1 YR P	M	Cotton	30	102	35	92	0	0	0	90	35	48	168	36	535
4-10/17	90bu/60bu	E-3	7	1 YR P	M	Wh, SB	80	272	93	245	0	0	0	357	93	116	185	36	664
4-10/18	200bu	E-3	7	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	324	36	836
2013		E-4															Nutrients Available via Soil Sample:	0	64	188
4-10/14	10tn	E-4	15	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	61	114
4-10/15	10tn	E-4	15	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	58	40
4-10/16	10tn	E-4	15	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-54	55	-34
4-10/17	10tn	E-4	15	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-72	52	-108
4-10/18	10tn	E-4	15	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-90	49	-182

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Acronyms	*Wh - Wheat*	*SB - Soybean*	*A - Acre lb - Pound*	*B. Hay - Bermudagrass Rem. - Removal*
Mo - Month	*L - Low*		*N - Nitrogen*	*H - High* *K - Potassium*
Yr - Year	*M - Medium*		*P- Phosphorus*	*VH - Very High* *th gal - Thousand Gallon*

Date			Size	Rate		Application		Nutrients Applied (Manure)			Nutrients Applied (Commercial)			Plant Uptake			Balance After Removal		
Mo/Yr	Yield Goal	Field Name/ Number	Acres	Based on N or P (1 Yr P, 2Yr P, etc.)	Soil Test Results L, M, H, VH	Crop	Rate/ Acre (th gals per acre)	N lb/A	P2O5 lb/A	K2O lb/A	N lb/A	P2O5 lb/A	K2O lb/A	Rem. Rate N	Rem. Rate P2O5	Rem. Rate K2O	N lb/ A	P2O5 lb/A	K2O lb/A
2013		E-5																	
																Nutrients Available via Soil Sample:	0	250	312
4-10/14	10tn	E-5	8	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	247	238
4-10/15	10tn	E-5	8	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	244	164
4-10/16	10tn	E-5	8	1 YR P	VH	B. Hay	50	170	59	153	170	0	120	460	120	500	-156	186	-63
4-10/17	10tn	E-5	8	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-174	183	-137
4-10/18	10tn	E-5	8	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-192	180	-211
2013		E-6																	
																Nutrients Available via Soil Sample:	0	250	252
4-10/14	10tn	E-6	6	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	247	178
4-10/15	10tn	E-6	6	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	244	104
4-10/16	10tn	E-6	6	1 YR P	VH	B. Hay	50	170	59	153	170	0	120	460	120	500	-156	186	-123
4-10/17	10tn	E-6	6	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-174	183	-197
4-10/18	10tn	E-6	6	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-192	180	-271
2013		E-7																	
																Nutrients Available via Soil Sample:	0	48	168
4-10/14	90bu/60bu	E-7	19	1 YR P	M	Wh, SB	80	272	93	245	102	0	0	357	93	116	17	48	297
4-10/15	200bu	E-7	19	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	156	48	469
4-10/16	2.5 Bales	E-7	19	1 YR P	M	Cotton	30	102	35	92	0	0	0	90	35	48	168	48	513
4-10/17	90bu/60bu	E-7	19	1 YR P	M	Wh, SB	80	272	93	245	0	0	0	357	93	116	185	48	642
4-10/18	200bu	E-7	19	1 YR P	M	Corn	75	255	88	230	34	0	0	150	88	58	324	48	814
2013		E-8																	
																Nutrients Available via Soil Sample:	0	98	382
4-10/14	10tn	E-8	7	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	95	308
4-10/15	10tn	E-8	7	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	92	234
4-10/16	10tn	E-8	7	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-54	89	160
4-10/17	10tn	E-8	7	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-72	86	86
4-10/18	10tn	E-8	7	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-90	83	12

Acronyms
Mo - Month *Yr - Year* *Wh - Wheat* *SB - Soybean* *L - Low* *M - Medium* *A - Acre lb - Pound* *N - Nitrogen* *P- Phosphorus* *B. Hay - Bermudagrass* *Rem. - Removal* *H - High* *VH - Very High* *K - Potassium* *th gal - Thousand Gallon*

Date			Size	Rate		Application		Nutrients Applied (Manure)			Nutrients Applied (Commercial)			Plant Uptake			Balance After Removal		
Mo/Yr	Yield Goal	Field Name/ Number	Acres	Based on N or P (1 Yr P, 2Yr P, etc.)	Soil Test Results L, M, H, VH	Crop	Rate/ Acre (th gals per acre)	N lb/A	P2O5 lb/A	K2O lb/A	N lb/A	P2O5 lb/A	K2O lb/A	Rem. Rate N	Rem. Rate P2O5	Rem. Rate K2O	N lb/ A	P2O5 lb/A	K2O lb/A
2013		E-9												Nutrients Available via Soil Sample:			0	250	408
4-10/14	10tn	E-9	7	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	247	334
4-10/15	10tn	E-9	7	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	244	260
4-10/16	10tn	E-9	7	1 YR P	VH	B. Hay	50	170	59	153	170	0	120	460	120	500	-156	186	13
4-10/17	10tn	E-9	7	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-174	183	-61
4-10/18	10tn	E-9	7	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-192	180	-135
2013		E-10/11												Nutrients Available via Soil Sample:			0	152	338
4-10/14	10tn	E-10/11	9	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	149	264
4-10/15	10tn	E-10/11	9	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	146	190
4-10/16	10tn	E-10/11	9	1 YR P	VH	B. Hay	50	170	59	153	102	0	120	460	120	500	-156	85	-37
4-10/17	10tn	E-10/11	9	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-174	82	-111
4-10/18	10tn	E-10/11	9	1 YR P	VH	B. Hay	100	340	117	306	102	0	120	460	120	500	-192	79	-185
2013		H-1												Nutrients Available via Soil Sample:			0	64	146
4-10/14	10tn	H-1	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-18	61	72
4-10/15	10tn	H-1	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-36	58	-2
4-10/16	10tn	H-1	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-54	55	-76
4-10/17	10tn	H-1	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-72	52	-150
4-10/18	10tn	H-1	10	1 YR P	H	B. Hay	100	340	117	306	102	0	120	460	120	500	-90	49	-224
2013		H-2												Nutrients Available via Soil Sample:			0	250	252
4-10/14	90bu/60bu	H-2	5	1 YR P	VH	Wh, SB	80	272	93	245	102	0	0	357	93	116	15	250	381
4-10/15	200bu	H-2	5	1 YR P	VH	Corn	75	255	88	230	102	0	0	150	88	58	55	250	553
4-10/16	2.5 Bales	H-2	5	1 YR P	VH	Cotton	30	102	35	92	34	0	0	90	35	48	79	250	597
4-10/17	90bu/60bu	H-2	5	1 YR P	VH	Wh, SB	80	272	93	245	102	0	0	357	93	116	94	250	726
4-10/18	200bu	H-2	5	1 YR P	VH	Corn	75	255	88	230	102	0	0	150	88	58	134	250	898

Acronyms	Wh - Wheat	SB - Soybean	A - Acre lb - Pound	B. Hay - Bermudagrass	Rem. - Removal
Mo - Month	L - Low		N - Nitrogen	H - High	K - Potassium
Yr - Year	M - Medium		P- Phosphorus	VH - Very High	th gal - Thousand Gallon

Tennessee Phosphorus Index*

E-1

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	(Medium)	High	Very High	2	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	(Incorporated more than 5 days after application)	Surface applied (no incorporation)	4	
				Part B: Total Management Value:	20	

Before Value - **Multiply Part A (** 8 **) x Part B (** 20 **) =** 160 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E2

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	(High)	Very High	4	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	26	

Before Value - **Multiply Part A (** 8 **) x Part B (** 26 **) =** 208 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

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Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-3

Part A: Phosphorus loss potential due to site and transport characteristics

Transport	Phosphorus Loss Rating				Before Value	After Value
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	C	D		
Erosion Potential (Table 2)	-	Low	Medium	High		
Permanent Vegetative Buffer Width *(ft)	>29	20-29	10-29	< 10		
Non-Application Width from Surface Water source (ft)	>29	20-29	10-29	< 10		

Part A: Total Site Value:

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics

Source	Phosphorus Loss Rating				Before Value	After Value
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	Very High	2	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	Surface applied (no incorporation)	4	
					20	

Part B: Total Management Value:

Before Value - **Multiply Part A (** 8 **) x Part B (** 20 **) =** 160 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-4

Part A: Phosphorus loss potential due to site and transport characteristics

Transport	Phosphorus Loss Rating				Before Value	After Value
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
*Permanent Vegetative Buffer Width *(ft)*	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics

Source	Phosphorus Loss Rating				Before Value	After Value
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	(High)	Very High	4	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	26	

Before Value - **Multiply Part A (8) x Part B (26) = 208 P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-5

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D		
Erosion Potential (Table 2)	-	(Low)	Medium	High		
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10		
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10		
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	(June – Sept.)	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	1	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	29	

Before Value - **Multiply Part A (** 8 **) x Part B (** 29 **) =** 232 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

E-6

Tennessee Phosphorus Index*

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
Part A: Total Site Value:					8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	(June – Sept.)	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	1	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
Part B: Total Management Value:					29	

Before Value - **Multiply Part A (** 8 **) x Part B (** 29 **) =** 232 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	General Soil Interpretation of P Index Points For the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-7

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	(Medium)	High	Very High	2	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 80 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				8	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	(Incorporated more than 5 days after application)	Surface applied (no incorporation)	4	
				Part B: Total Management Value:	16	

Before Value - **Multiply Part A (** 8 **) x Part B (** 16 **) =** 128 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

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The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

E-8

Tennessee Phosphorus Index*

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
Part A: Total Site Value:					8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	(High)	Very High	4	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
Part B: Total Management Value:					26	

Before Value - **Multiply Part A (8) x Part B (26) = 208 P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-9

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
Part A: Total Site Value:					8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	(June – Sept.)	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	1	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
Part B: Total Management Value:					29	

Before Value - **Multiply Part A (8) x Part B (29) = 232 P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

1.

The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-10

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D		
Erosion Potential (Table 2)	-	(Low)	Medium	High		
Permanent Vegetative Buffer Width *(ft)	(>29*)	20-29	10-29	< 10		
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10		
				Part A: Total Site Value:		

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	(June – Sept.)	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	1	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	29	

Before Value - **Multiply Part A (** 8 **) x Part B (** 29 **) =** 232 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

E-10

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

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The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

E-11

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	(June – Sept.)	April, May, Oct., March or Nov. w/ winter cover	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	1	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	29	

Before Value - **Multiply Part A (8) x Part B (29) = 232 P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

* The index numbers and the interpretations, as well as the whole document will continue to be reviewed and evaluated, and are subject to modification as further field testing and validation of the index continues.

February 2001

Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

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The four hydrologic groups are:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

H-1

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	(High)	Very High	4	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 120 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				12	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	Incorporated more than 5 days after application	(Surface applied (no incorporation))	8	
				Part B: Total Management Value:	26	

Before Value - **Multiply Part A (8) x Part B (26) = 208 P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

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February 2001

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Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

Hydrologic Soil Groups are categorized based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Refer to Table 2-1 in Chapter 2 of the NRCS Engineering Field Manual. For a summary of the hydrologic groupings for most Tennessee soils see Table 1 (next page).

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Group C: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

Tennessee Phosphorus Index*

H-2

Part A: Phosphorus loss potential due to site and transport characteristics						
Transport	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Hydrologic Soil Group (Table 1)	A	B	(C)	D	4	
Erosion Potential (Table 2)	-	(Low)	Medium	High	2	
Permanent Vegetative Buffer Width *(ft)	(>29)	20-29	10-29	< 10	1	
Non-Application Width from Surface Water source (ft)	(>29)	20-29	10-29	< 10	1	
				Part A: Total Site Value:	8	

* Permanent Vegetative Buffer must be installed, constructed, and maintained in accordance with applicable NRCS Conservation Practice Standard.

Part B: Phosphorus loss potential due to source and management characteristics						
Source	**Phosphorus Loss Rating**				**Before Value**	**After Value**
	(1 point)	*(2 points)*	*(4 points)*	*(8 points)*		
Soil Test P Value	Low	Medium	High	(Very High)	8	
P Application Rate (lbs/ac/crop or crop sequence/rotation)	0.20 x _____ lbs P_2O_5 applied as commercial fertilizer 0.10 x 60 lbs P_2O_5 applied as manure, litter, or biosolids 0.05 x _____ lbs P_2O_5 applied as alum amended poultry litter				8	
Application Timing	June – Sept.	(April, May, Oct., March or Nov. w/ winter cover)	March or Nov. w/o winter cover, Feb. w/ winter cover	Dec., Jan., Feb.	2	
Application Method	Injected/Banded 2" below the surface	Incorporated within 5 days of application	(Incorporated more than 5 days after application)	Surface applied (no incorporation)	4	
				Part B: Total Management Value:	22	

Before Value - **Multiply Part A (** 8 **) x Part B (** 22 **) =** 176 **P Loss Rating**

After Value - **Multiply Part A (_____) x Part B (_____) = _____ P Loss Rating**

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Total Points from P Index	Generalized Interpretation of P Index Points for the Site
< 100	**LOW** potential for P movement from the field. If farming practices are maintained at the current level there is a low probability of an adverse impact to surface waters from P losses. Nitrogen-based nutrient management planning is satisfactory for this site. Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
100 - 200	**MEDIUM** potential for P movement from the field. The chance for adverse impact to surface waters exist. *Nitrogen-based nutrient management planning are satisfactory for this field when conservation measures are implemented to lessen the probability of P loss.* Soil P levels and P loss potential may increase in the future due to N-based nutrient management.
201 - 300	**HIGH** potential for P movement from the field. The chance for adverse impact to surface waters is likely unles remedial action is taken. Soil and water conservation practices are necessary (if practical) to reduce the risk of P movement and water quality degradation. If risk cannot be reduced, then a P-based nutrient management plan will be implemented.
> 301	**VERY HIGH** potential for P movement from the field and an adverse impact on surface waters. All necessary soil and water conservation practices, plus a P-based nutrient management plan must be put in place to avoid the potential for water quality degradation.

Description of Terms

Part A: Phosphorus Loss Potential Due to Transport Characteristics

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NOTE: If a soils is assigned to two hydrologic groups in Table 1, the first letter is for drained areas.

DEAD ANIMAL DISPOSAL STATEMENT

We are composting dead animals in sawdust. After decomposition, we are spreading it in fields and plowing under.

Doug Dowdy

Doug Dowdy

Closure Plan

In the event that Swine production at this location ceases, the following will be done within 360 days:

- All manure in all animal use areas will be removed and spread on the farm or spread elsewhere according to my current Nutrient Management Plan.
- The most current manure analysis will be provided to anyone removing manure from the farm.
- Any dead pigs on the farm will be disposed of at the time of closure according to methods outlined in my current Nutrient Management Plan and or allowable by Tennessee Law.
- Any manure which is land applied will be done so according to the rates discussed in my most recent Nutrient Management Plan.

The following will be completed within a reasonable period as allowable by law using Tennessee Natural Resources Conservation Service (NRCS) Standard Code 360- Closure of Waste Impoundments:

- Any manure storage facility (lagoon) located on the swine farm will be properly decommissioned.
- Any manure currently in storage at the time of closure will be removed and spread on the farm or spread elsewhere according to my current Nutrient Management Plan.
- The lagoon will be breached and backfilled and or converted to freshwater storage according to NRCS standards.

Doug Dowdy

Date: 9-20-11

DOWDY CLOSURE PLAN

If the storage facility is no longer used for animal confinement and manure storage, it shall be closed as follows. Manure and wastewater will be agitated and pumped to the extent conventional pumping will allow. Clean water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with NRCS conservation practice standard, Nutrient Management (Code 590). The sludge remaining on the bottom and sides of the waste treatment lagoons or waste storage ponds may remain in place if it will not pose a threat to the environment. If leaving the sludge in place would pose a threat, it shall be removed to the fullest extent practical and utilized in accordance with NRCS conservation practice standard, Waste Utilization (Code 633) and/or Nutrient Management (Code 590).

Land reclamation. Impoundments with embankments may be breached so that they will no longer impound water and excavated impoundments may be backfilled so that these areas may be reclaimed for other uses. Waste impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three (3) feet or more above natural ground.

(1) Embankment Impoundments. Manure shall be removed from the site before the embankment is breached. The slopes and bottom of the breach shall be stable for the soil material involved, however the side slopes shall be no steeper than three horizontal to one vertical (3:1).

(2) Excavated Impoundments. The backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The finished surface shall be constructed of the most clayey material available and mounded to shed rainfall runoff. Incorporate available topsoil where feasible to aid establishment of vegetation.

Conversion to fresh water storage. The converted impoundment shall meet the requirements of the appropriate NRCS conservation practice standard for the intended purpose (*e.g.,* Pond, Code 378; Irrigation Pit or Regulating Reservoir, Code 552; or Irrigation Storage Reservoir, Code 436). This will require an investigation of the structural integrity of the impoundment if not originally constructed with NRCS technical assistance.

Safety. When sludge is not removed from an embankment or excavated pond, precautions (fencing and warning signs) will be used to ensure that the pond is not used for incompatible purposes (such as swimming, livestock watering, fish production, etc.) until water quality is adequate for the intended purpose. Water quality sampling and analysis shall be used to determine when the pond is safe for these uses.

Protection. All disturbed areas not returned to crop production shall be vegetated in accordance with NRCS conservation practice standard Critical Area Planting, Code 342.

Dowdy Pork LLC
Facility Name

Declarations to Nutrient Management Plan:

By my signature below, I affirm that I have read, understand, and will comply with the following stipulations from Tennessee's CAFO regulations that apply to my CAFO operation:

1) All animals in confinement are prevented from coming in direct contact with waters of the state.
2) All chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.
3) Pesticide-contaminated waters will be prevented from discharging into waste retention structures. Waste from pest control and from facilities used to manage potentially hazardous or toxic chemicals shall be handled and disposed of in a manner that will prevent pollutants from entering waste retention structures or waters of the state.
4) Chemicals, manure/litter, and process wastewater will be managed to prevent spills. Spill clean-up plans will be developed and any equipment needed for spill clean-up will be available to facility personnel.
5) All sampling of soil and manure/litter is conducted according to protocols developed by UT Extension.
6) All records outlined in the permit that I am applying for will be maintained and available on-site.
7) Any confinement buildings, waste/wastewater handling or treatment systems, lagoons, holding ponds, and any other agricultural waste containment/treatment structures constructed or modified after April 13, 2006, are or will be located in accordance with NRCS Conservation Practice Standard 313.
8) A copy of the most recent Nutrient Management Plan will be kept as part of the farm records and will be maintained and implemented as written.
9) If applicable, all waste directed to under floor pits shall be composed entirely of wastewater (i.e. washwater and animal waste).
10) The Tennessee Department of Environment and Conservation Division of Water Resources will be notified of any significant wildlife mortalities near retention ponds or following any land application of animal wastes to fields.
11) All employees involved in work activities that relate to permit compliance will receive regular training on proper operation and maintenance (O&M) of the facility and waste disposal. Training shall include appropriate topics, such as land application of wastes, good housekeeping and material management practices, proper O&M of the facility, record keeping, and spill response and clean up. The periodic scheduled dates for such training shall be identified in the current Nutrient Management Plan.
12) There shall be no land application of nutrients within 24 hours of a precipitation event that may cause runoff. The operator shall not land apply nutrients to frozen, flooded, or saturated soils.

Doug Dowdy
Signature of CAFO Owner/Operator

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Date

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